

**RESPONSE TO COMMENTS ON THE ON-SITE DISPOSAL FACILITY
INTERIM DESIGN PACKAGE - (RESPONSES TO OEPA AND USEPA
COMMENTS)**

07/02/96

**DOE-1065-96
DOE-FN EPAS
65
RESPONSES**



Department of Energy

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JUL 2 1996

DOE-1065-96

Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V - SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

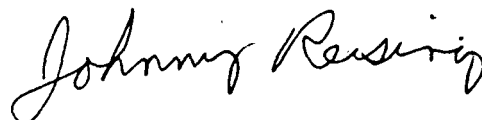
RESPONSE TO COMMENTS ON THE ON-SITE DISPOSAL FACILITY INTERIM DESIGN PACKAGE

Enclosed for your review and approval is the Department of Energy, Fernald Area Office (DOE-FN) Response to Comments for the Interim Design Package (60 percent). These Response to Comments reflect discussions held between the U.S. Environmental Protection Agency (U.S. EPA), the Ohio Environmental Protection Agency (OEPA), the DOE-FN, and the Fernald Environmental Restoration Management Corporation (FERMCO) regarding the responses.

During one of these meetings, the difficulties of committing to more milestones were discussed. The dynamics of this type of construction (e.g., funding, weather conditions, variation in excavation quantities, and other subsurface unknowns) make it difficult to establish achievable long term milestones. The DOE-FN would propose to define and update the interim construction milestones on a schedule that would be determined once the fiscal year funding level has been established. This approach would allow for a "lessons learned" from the previous year and the flexibility for both the regulatory agencies and DOE-FN to more clearly identify important steps in the construction sequence. This milestone scenario will be further developed in the Remedial Action Work Plan.

If you have any questions regarding this submittal, please contact Rod Warner at (513) 648-3156.

Sincerely,



Johnny W. Reising
Fernald Remedial Action
Project Manager

FN:Warner

Enclosure: As Stated

cc w/enc:

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EDC

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**TECHNICAL REVIEW COMMENTS ON THE
INTERMEDIATE DESIGN PACKAGE FOR THE
ON-SITE DISPOSAL FACILITY**

INTERMEDIATE DESIGN CALCULATION PACKAGE

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.3

Page #: NA

Line #: NA

Original General Comment #: 1

Comment: *This section provides the OSDF earthwork volume requirements. The calculations in this section lack the earthwork volume requirements for the test pad. The section should be revised to include test pad earthwork volume requirement calculations.*

Response: The Test Pad Work Plan, Revision 0, dated April 1996 contains all information pertinent to the test pad. Earthwork volumes for the test pad were not calculated because the pad will be constructed and demolished under an hourly rate schedule.

Action: No action is required.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 13.1

Page #: NA

Line #: NA

Original General Comment #: 2

Comment: *Original Specific Comment #9 of the preliminary (30 percent) design package states that the crest of the flood protection berm on the west side of the On-Site Disposal Facility (OSDF) should be constructed to a minimum elevation of 596.0 feet above mean sea level (amsl). However, Drawing 6-41 presents a profile of the top of the west berm that indicates that a 1,500-foot section of the berm is up to 4.5 below the 596.0 amsl 2,000-year flood elevation. In its March 1996 submittal, the U.S. Department of Energy's (DOE) response to this comment states that the intermediated design package (IDP) perimeter berm detail will be revised including revised runoff calculations. The response further states that the revised calculations demonstrate that runoff and runoff from the 2,000-year, 24-hour design storm will be fully controlled by the OSDF surface water management system and the maximum flood elevation will not encroach upon the OSDF. DOE's response states that Section 13.1 of the IDP calculation package and Drawing G-30 will satisfy U.S. EPA's comment.*

The stated revisions to Section 13-1 and Drawing G-30 are not adequate to satisfy the original comment. Figure 3 is illegible and there is not cross-section and profile

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drawing to show perimeter berm elevations. The text should be revised to address this comment.

Response: As shown on Drawing X-6 of the IDP Plan, the 2,000-year floodplain does not extend closer than about 2,000 feet to the OSDF. Therefore, there is no need to limit OSDF perimeter elevations to above 596 msl. (The original PDP (30%) referenced 596.0 msl as the maximum probable flood (MPF) elevation which is not a design criteria.) The revised calculations of the IDP demonstrate that runoff and runoff from the 2,000-year, 24-hour design storm will be fully controlled by the OSDF surface water management system and the maximum flood elevation will not encroach upon the OSDF.

Action: Figure 3 in Section 13.1 of the calculations will be replaced with a more legible copy in the Prefinal Design Package.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: NA

Page #: NA

Line #: NA

Original General Comment #: 3

Comment: *The Air Monitoring Plan should be a stand-alone document. As currently written, the plan makes reference to numerous Fernald Environmental Management Program (FEMP) plans and documents but does not present or discuss the material it makes reference to in sufficient detail. For example, Section 6.2.2 refers to a standard operating procedure (SOP) for high-volume air monitoring. That SOP should be included as an appendix to the Air Monitoring Plan. Additional examples of material that should be discussed more completely or incorporated in the Air Monitoring Plan are discussed in the Specific Comments section of this document.*

Response: DOE does not agree that this plan should be a stand-alone document, especially where the elements of the program to be implemented are components of a site-wide program governed by other existing or to be developed plans to be submitted to the regulatory agencies for review. The referenced SOP — High-Volume Air Monitoring Procedure (Procedure No. SRS-REM-001) — is part of the site-wide environmental air monitoring program which is the topic of the forthcoming Integrated Environmental Monitoring Plan (IEMP) specifically identified in the draft. DOE will submit separately a copy of the SOP referenced with the next submittal of this Air Monitoring Plan. As the referenced SOP is a procedure under the sitewide FEMP Environmental Monitoring Plan (EMP) and its subsequent successor IEMP, if it is to be an appendix to any plan, it would be most appropriate to be an appendix to the IEMP (or possibly the SCQ).

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Action: Submit separately a copy of High-Volume Air Monitoring Procedure (Procedure No. SRS-REM-001) when the revision of this plan is submitted.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: NA

Page #: NA

Line #: NA

Original General Comment #: 4

Comment: The Air Monitoring Plan is limited to evaluating potential air emissions for remedial activities associated with the OSDF. The activities (discussed in Section 3.4.2) include construction of the facility, placement of wastes in the facility, capping the facility, and excavating soil from the borrow area. The plan is not designed for monitoring and does not consider other activities that will generated air emissions. Specifically, the plan does not include monitoring of air emissions associated with excavation and demolition activities in the five operable units (OU) or air emissions associated with the transport of material from the OUs to the OSDF. Air emissions from those activities are likely to be as significant as air emissions associated with the disposal facility. The Air Monitoring Plan should be expanded to address the additional air emissions or should identify clearly any other monitoring plans that will be developed to evaluate such emissions.

Response: The OSDF Air Monitoring Plan was specifically developed to address the air monitoring program for OSDF activities, with an intended emphasis on how that OSDF air monitoring program is a component of the site-wide environmental air monitoring program developed under the FEMP Environmental Monitoring Plan (EMP) specifically identified in this draft. This draft also specifically identifies that the EMP will be superseded by its upcoming revision, specifically identified therein as the Integrated Environmental Monitoring Plan (IEMP). The OSDF Air Monitoring Plan has been revised to better present this information. It is beyond the scope of this OSDF Air Monitoring Plan to address other air monitoring plans.

Action: As per response.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: NA

Page #: NA

Line #: NA

Original General Comment #: 5

Comment: Section 3.2.6.8 of the Intermediate Design Criteria Package lists five requirements that the Air Monitoring Plan should address. The last two requirements (quality assurance requirements and requirements governing the qualifications of air monitoring

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personnel) are not covered in the Air Monitoring Plan. The plan should be revised to address those requirements.

Response: The plan has been revised to address the quality assurance requirements and requirements governing the qualifications of air monitoring personnel.

Action: As per response.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 1.1

Page #: 1-1

Line #: 18 to 27

Original General Comment #: 6

Comment: *The introduction to the Air Monitoring Plan for the OSDF states that the plan will be supported by "two existing site air emissions monitoring programs ... the Occupational Air Monitoring Program and the Fernald Sitewide Environmental Monitoring Program." The Air Monitoring Plan discusses the manner in which the data from the second of those programs will be used to evaluate air emissions from the OSDF. However, the plan contains no subsequent discussion of how the results of the Occupational Air Monitoring Program will be used. The Air Monitoring Plan should be revised to address this deficiency. Specific Comments #11, #12, and #25 present additional concerns related to this issue.*

Response: The plan has been revised to briefly describe the occupational and radiological safety air monitoring program, and how information from them will be used in relation to air emissions control and monitoring. See also responses to Original Specific Comments #11, #12, and #25.

Action: As per the response.

CULTURAL RESOURCE UNEXPECTED DISCOVERY PLAN

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.C

Page #: J-1

Line #: NA

Original General Comment #: 7

Comment: *The text states that Phase I and Phase II investigations were conducted and indicates that data are being recovered; however, the text provides no background description of Phase I investigation and findings or of activities conducted during the Phase II investigation. The text should be revised to summarize briefly the results of those investigations.*

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Response: Cultural resources investigations (Phases I and II) were conducted in the area of the on-site disposal facility (OSDF) and support operations prior to any ground disturbing activities. During the Phase I investigations in the area twenty-three archaeological sites were identified during the investigation. Nineteen of the sites (33Ha646 through 33Ha664) were located in Hamilton County. The four remaining sites (33Bu487 through 33Bu490) were located in Butler County. Three of the sites were designated as historic, and 20 were prehistoric. Two of the historic sites, 33Ha654 and 33Bu487, and four of the prehistoric sites, 33Ha646, 33Ha647, 33Ha650, and 33Ha662, were recommended as potentially eligible for inclusion in the National Register of Historic Places (NRHP). The other 17 were recommended as not eligible.

A Phase II investigation was conducted on the six sites that were recommended as potentially eligible for the NRHP. The investigation involved shovel testing and test unit excavations. A subsurface feature at two sites (33Ha646 and 33Ha662), were sectioned and proved to be prehistoric hearths. Some additional historic features were also identified as sites 33Bu487 and 33Ha654.

Based on the findings of the Phase II investigation, it was determined that 33Bu487, 33Ha647, and 33Ha648 were not eligible for the NRHP. However, sites 33Ha646, 33Ha654, and 33Ha662 retain the integrity and possess the scientific value capable of yielding data important to either the prehistory or history of the region. These three sites were designated as sites requiring Phase III or data recovery to ensure the safe removal and/or recording of the cultural resources identified. The Phase III activities will be completed prior to any construction activities in the area of the sites designated as potentially eligible.

Action: This text will be added to the Cultural Resource Unexpected Discovery Plan

CONSTRUCTION QUALITY ASSURANCE PLAN

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: NA

Page #: NA

Line #: NA

Original General Comment #: 8

Comment: Several specification sections refer to the Construction Quality Assurance (CQA) Plan. Unless the contract documents include the CQA Plan as part of the specifications, there is not contractual responsibility on the part of the construction subcontractor to adhere to the CQA Plan. The CQA Plan should be incorporated into the contract documents, or all the stipulations of the CQA Plan that are the responsibility of the construction subcontractor must be included in the contract documents.

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Response: DOE agrees that the CQA Plan should be a part of the contract documents and that all Subcontractor requirements should be stated in the Specifications.

Action: The CQA Plan has been revised for the Prefinal Design Package to remove all Subcontractor requirements and to concentrate on the roles and duties of the CQC Consultant.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: NA

Page #: NA

Line #: NA

Original General Comment #: 9

Comment: The responsibility for submitting data must be set forth identically in the CQA Plan and the specifications. For example, on Page 8-5, the CQA Plan states that the manufacturer submits information about the geomembrane to the construction contracts manager (CCM), while Section 02772-4 of the specifications states that the construction subcontractor submits that information. These discrepancies should be corrected.

Response: DOE agrees with this comment. It is our intent to make the subcontractor responsible for all contract submittals.

Action: The CQA Plan has been reviewed for similar discrepancies and corrections have been implemented as appropriate for the Prefinal Design Package.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: NA

Page #: NA

Line #: NA

Original General Comment #: 10

Comment: The relationships among the resident engineer, the construction quality control (CQC) consultant, and the CCM is not clear. Those relationships should be defined more clearly in the CQA Plan and should conform with those relationships as described in the specifications.

Response: DOE will provide a clearer organizational chart. The proposed organizational chart is attached for information. The proposed organizational responsibilities of the Resident Engineer, the Construction Quality Control Consultant, and the CCM are as follows: First, the intent is to change the CCM to the Construction Manager (CM). The Construction Manager will be the FERMCO on-site representative responsible for directing all aspects of the field work. These include ensuring safe working conditions, assuring compliance with contract drawings and specifications, and support

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plans, directing the subcontractor(s) work, directing approved change orders. The Resident Engineer's responsibilities are detailed in Section 4.2.3 of the CQA Plan. The Resident Engineer will not have the authority to modify any contract documents without the approval of the CM. The CQC consultant will provide construction quality control services for the OSDF project. The CQC consultant will bring to the attention of the CM all non-conformances. If these non-conformances are not corrected within a reasonable period of time, the CQC will report the non-conformances to FERMCO Quality Assurance. FERMCO Quality Assurance will have stop work authority if the non-conformances are not properly addressed. The CQC will not have the authority to modify any contract documents without the approval of the CM.

Action: Provide a new organizational chart.

IMPACTED MATERIALS PLACEMENT PLAN

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: NA

Page #: NA

Line #: NA

Original General Comment #: 11

Comment: *The Impacted Materials Placement Plan discussed five categories of materials that will be placed in the OSDF, as well as the Quality Assurance Plan under which materials coming to the OSDF will be monitored and procedures for placement and compaction. Volume reduction for oversized materials under category 5 should be considered to further reduce the possibility of differential settlement of the final cover.*

Response: At this time DOE intends to limit items placed into the OSDF to those items meeting the approved WAC. DOE would like the option of placing oversized materials in the OSDF. However, in order to place these items in the OSDF an official approval process must be established. OU3 is currently inventorying possible candidate items for placement into the OSDF. After this inventory is finished, OU3 will prepare a draft proposal for review and approval.

Action: Remove references to placing oversized materials into the OSDF from the IMPP.

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Commenting Organization: U.S. EPA
Section #: 8.5 Page #: 8-6
Original General Comment #: 12

Commentor: Saric
Line #: 19 and 20

Comment: *The extent to which category 4 materials will be mixed with soils to minimize the potential for anaerobic decomposition is vague. Inclusion of a limit on the volume of category 4 materials that will be placed in a given acreage of the OSDF will be helpful to the operator of the OSDF.*

Response: DOE agrees with the comment.

Action: The IMP Plan has been revised for the Prefinal Design Package to delete the vague referenced to mixing with soils. The IMP Plan has also been revised to not allow placement of Category 4 material horizons in the same vertical plane as previous Category 4 material horizons.

Commenting Organization: U.S. EPA
Section #: NA Page #: NA
Original General Comment #: 13

Commentor: Saric
Line #: NA

Comment: *The Remedial Action Work Plan (RAWP) identifies various support plans for the OSDF remedial action project that have been or will be submitted to U.S. Environmental Protection Agency (U.S. EPA) for review. Specific sections of the RAWP often refer to those support plans, but provide no discussion of their content or specific purposes in relationship to the RAWP. In each section, as appropriate, the RAWP should be revised to summarize briefly the content and purpose of each support plan and indicate how the plans support the RAWP.*

Response: The RAWP has been modified to briefly summarize the content and purpose of each support plan. This description has been added within Section 1.3 SUMMARY OF WORK PLAN APPROACH, where the individual support plans are first mentioned.

Action: As per response.

Commenting Organization: U.S. EPA
Section #: NA Page #: NA
Original General Comment #: 14

Commentor: Saric
Line #: NA

Comment: *In discussing the background of the OSDF project, the RAWP refers to separate work plans that were submitted previously. The RAWP is an enforceable document and as such, the RAWP should be revised to expand on the OSDF project descriptions. It is*

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recommended that the following information be summarized in the RAWP: (1) approximate volume of impacted material to be placed in the OSDF, (2) waste acceptance criteria (WAC) for impacted material, (3) identification of proposed staging areas for impacted material and reference to a document that describes procedures for managing the staged material, (4) areal extent and height of the OSDF, (5) information describing the leachate detection and collection system, and (6) information describing the design of the liner and cover system. A figure(s) showing the location and configuration of the OSDF also should be included.

Response: Agreed. The requested information on the OSDF will be added to the RAWP.

Action: The requested information and figures were added to Section 1.2.1 of the RAWP.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: NA

Page #: NA

Line #: NA

Original General Comment #: 15

Comment: *The work plan does not address the interim closure scenario for the OSDF. That scenario, agreed upon verbally by DOE and U.S. EPA included temporary closing of the landfill for an extended period of time if the project funding should be cut substantially or eliminated. A brief discussion of that scenario and a more comprehensive description of the construction sequence should be included in the text of the RAWP. A table identifying the approximate cell construction dates also should be included in the text.*

Response: This comment contains several comments. The first one requests a discussion on the interim closure scenario. During a recent meeting between DOE and USEPA, this question was clarified. Text will be added to the RAWP that defines that any interim closure cover will be the same as the final cover.

The second comment requests a more detailed discussion of the Construction sequence. During a recent meeting with both USEPA and OEPA the difficulties of committing to more milestones was discussed.

The dynamics of this type of construction (e.g., funding, weather conditions, variation in excavation quantities, and other subsurface unknowns) make it difficult to establish achievable long-term milestones. DOE proposes to update the interim construction milestones on an annual fiscal year basis. This approach would allow for a "lessons learned" from the previous year and the flexibility for both the regulatory agencies and DOE to more clearly identify important steps in the construction sequence.

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Action: Provide interim closure discussion in RAWP. Also, add additional construction milestones for fiscal year 1997. DOE commits to provide both agencies the names of the current project personnel on a quarterly basis. Each position presented in the chart will be discussed in the RAWP. The proposed chart was presented as part of the response to question number 10.

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SPECIFIC COMMENTS

PRELIMINARY DESIGN CALCULATION PACKAGE

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.2

Page #: 4 of 16

Line #: NA

Original Specific Comment #: 1

Comment: The thickness of the soil components of the liner system is 6 feet with the geosynthetic components adding negligible additional thickness. The cross-sectional area calculation of the liner system uses a thickness of 5 feet. The calculation should be revised to incorporate the correct liner system thickness because it affects the subsequent net area calculation (page 5 of 16) and the net volume calculations (page 10 of 16).

Response: The purpose of Section 2.2 of the calculation package is the verification of the OSDF capacity to contain impacted materials. For the purpose of accounting for non-impacted materials to be subtracted from the overall volume of the cells, a calculation of the liner volume was made. A 5-foot liner thickness was used since the 1-foot protective layer is composed of impacted materials.

Action: No action is required.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.3

Page #: 9 of 32

Line #: NA

Original Specific Comment #: 2

Comment: The inner cell cover system earthworks requirement volume calculation considers the earthwork volume for a choke layer and a contouring layer. A cross-section sketch of the inner cell cover system, including these two layers, should be included or referenced in this section.

Response: DOE agrees to this comment.

Action: A sketch of the cell cover system has been added to Section 2.3 of the calculations for the Prefinal Design Package.

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INTERMEDIATE DESIGN CRITERIA PACKAGE**Commenting Organization:** U.S. EPA**Commentor:** Saric**Section #:** 2.8.3**Page #:** 2-90**Line #:** NA**Original Specific Comment #:** 3

Comment: *Bullet #1 states "stormwater runoff from watersheds in the OSDF to the receiving water course (e.g., Paddys Run) should be discharged at a rate no greater than the predevelopment runoff discharge rate unless it is documented or demonstrated that the receiving watercourse can accept such flow."*

Regardless of the capacity of the receiving water course, the maximum stormwater runoff discharge rate should be restricted to the predevelopment runoff discharge rate. Such restriction will prevent any unexpected flooding downstream, since stormwater runoff should not be conveyed downstream at a faster rate in the developed stage than it would have been transmitted downstream in the predeveloped stage. The phrase "the receiving water course can accept such flow" should be deleted from the text.

Response: DOE agrees with the comment.

Action: The cited phrase has been deleted from the text of the Prefinal Design Criteria Package.

Commenting Organization: U.S. EPA

Commentor: Saric**Section #:** 2.8.4.A**Page #:** 2-96**Line #:** NA**Original Specific Comment #:** 4

Comment: *The text indicates that the haul roads will be constructed of suitable material that conforms to standard specifications established by the Ohio Department of Transportation (ODOT). The applicable ODOT standard specifications for road material should be stated, or a reference should be made to the design specifications for the haul roads.*

Response: DOE will provide a reference to the design specifications for the haul roads.

Action: Add reference to haul road specifications.

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Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.9.2.4 Page #: 2-105 Line #: NA
Original Specific Comment #: 5

Comment: *The last paragraph of this section states that large off-road earthmoving equipment may be decontaminated inside an active cell with a portable high-pressure spray, with the runoff allowed to percolate into the cell collection system. There should be noted on the plans a designated area within each active cell for that decontamination operation, located where it will not interfere with other activities conducted there.*

Response: It is not DOE's practice to direct the Subcontractor in the work area. It should be left to the Subcontractor as to where decontamination activities should be accomplished in an active cell. By making designation of the area his responsibility, any conflicts with filling operations is also his responsibility.

Action: No action is required.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.10.2.1 Page #: 2-112 Line #: NA
Original Specific Comment #: 6

Comment: *Bullet #3 of this section discusses the grade of the borrow area. The text states that by limiting the depth of excavation, the design will be: more cost effective when it includes final slopes of at least 0.5 percent to promote drainage. A minimum grade of 0.5 percent on a restored grass-lined slope may not be sufficient to promote good drainage. A minimum slope of 1 percent would be a more positive drainage slope and promote better storm water management, while remaining cost-effective.*

Response: DOE agrees with the comment.

Action: The DCP has been revised for the Prefinal Design Package to require a minimum slope of 1 percent for the final grade of the borrow area.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.10.2.4 Page #: 2-116 Line #: NA
Original Specific Comment #: 7

Comment: *The text indicates that the haul roads will be constructed of suitable material that conforms to standard specifications established by the Ohio Department of Transportation (ODOT). The applicable ODOT standard specifications for road*

material should be stated, or a reference should be made to the design specifications for the haul roads.

Response: The detailed requirements for haul road construction are given in Section 02230 of the specifications.

Action: No action is required.

PERMITTING PLAN AND SUBSTANTIVE REQUIREMENTS

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.2

Page #: 2-1

Line #: 24 - 26

Original Specific Comment #: 8

Comment: The text indicates that construction water generated during construction of the liner and cover systems will be discharged through the permitted stormwater outfall at Paddy's Run. Because the water may contact disturbed areas, this paragraph should state clearly why the water will not be treated before discharge. The text should be revised to provide justification for not treating the construction water which comes in contact with waste before its discharge to Paddy's Run.

Response: The phrase "disturbed areas" as used in this text means excavation, grading, and construction activities in non-contaminated areas and with non-contaminated material. Any stormwater or construction water that comes into contact with waste material will be sent to the AWWT for treatment before being discharged. Please see response to Original Specific Comment #65 for a more detailed discussion of the treatment of construction water.

Action: The text will be revised to clarify the meaning of "disturbed area" and to emphasize that the stormwater discharged to Paddy's Run will not have come into contact with waste material.

AIR MONITORING PLAN

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 1.2

Page #: 1-3

Line #: 3 to 14

Original Specific Comment #: 9

Comment: Section 1.2 lists two requirements, based on the Final Records of Decision for OU2 and OU5, that the Air Monitoring Plan must address. The second requirement is that

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the plan should "provide for collection of air particulate data in real-time." The monitoring frequency described in Section 5 does not meet this requirement. The plan calls for continuous sampling of ambient air, but samples are to be recovered and analyzed only biweekly for some parameters and only annually for others. The plan should discuss further how the requirement to collect real-time air particulate data will be met.

Response: The comment only partially quotes the second requirement and misinterprets the commitment made in the OU2 and OU5 RODs. The second requirement is fully quoted as "provide for collection of air particulate data in real-time." The plan as originally drafted was intended to illustrate the following fundamentals:

- (1) the nature of the potential emissions are airborne particulate emissions; and
- (2) the regulations prescribe mechanisms for control of visible particulate emissions, and also prescribe visual evaluation of visible particulate emissions as the assessment mechanism; and
- (3) without accounting for the control mechanisms indicated above, the predicted levels of potential concentrations, risks, and doses are significantly lower than regulatory compliance thresholds; and
- (4) the established regulatory exposure thresholds have a point of exposure/point of compliance defined as public exposure; and
- (5) the established regulatory exposure thresholds' compliance bases are defined in terms of a one year exposure period; and
- (6) annual demonstration of compliance with the established regulatory exposure thresholds is prescribed by the regulations via modelling on a site-wide basis.

The plan has been revised to better present those and other fundamentals, and to better address the technical approach for formulating the air monitoring program for the OSDF project activities. That revision addresses the concerns expressed in this comment along with other concerns raised by the U.S. EPA and OEPA in other comments.

Action: As per response.

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Commenting Organization: U.S. EPA
 Section #: 3.1 Page #: 3-1
 Original Specific Comment #: 10

Commentor: Saric
 Line #: 15 to 19

Comment: Section 3.1 states that air emissions from construction of the OSDF and placement of impacted material were evaluated as described in the Feasibility Study Report for OU5. The evaluation is summarized only briefly in Section 3 of the Air Monitoring Plan. However, the evaluation serves as the technical basis for the selection of analytical parameters, monitoring locations, and frequency of monitoring. The Air Monitoring Plan should be revised to include an expanded summary of methods to be used and results of the evaluation, or that information should be included as an appendix to the plan. Specifically, the expanded summary should address all activities that generate air emissions that were evaluated, the methods used to estimate air emissions, the type of dispersion model that was used to predict ambient air concentrations, and the downwind receptor locations that were evaluated.

Response: DOE does not agree that this plan needs to be revised to present a detailed explanation. This plan has been revised to make more explicit reference to the sections of and the appendix to the OU5 FS which present the short term risk assessment, which presents the information requested in this comment — activities that generate air emissions that were evaluated, the methods used to estimate air emissions, the type of dispersion model that was used to predict ambient air concentrations, and the downwind receptor locations that were evaluated. The plan has also been revised to better explain the formulation of the analysis regimen and, in response to U.S. EPA Original General Comment #4, further emphasis on identifying other monitoring plans which will be developed to evaluate such other emissions.

Action: As stated.

 Commenting Organization: U.S. EPA
 Section #: 3.1 Page #: 3-1
 Original Specific Comment #: 11

Commentor: Saric
 Line #: 27 to 30

Comment: The text states that remedial workers on the property are potentially at risk from inhalation of air emissions from the OSDF and that the workers should be monitored under a health and safety program. The Air Monitoring Plan should discuss in greater detail (1) any ambient air monitoring activities that will be conducted under this effort and (2) how resulting data will be used to support the air monitoring program for the OSDF (See General Comment #6).

Response: The specific text referred to in this comment has been revised to clarify its intent. Redline and strikeout are used to indicate the changes: "Only the on-property

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remediation workers could potentially incur risks exceeding one in one million (1.0×10^{-6}) and no greater than 9.4 in ten thousand (9.4×10^{-4}). This indicates these remediation workers should be monitored subject to occupational medical monitoring in accordance with the site's approved health and safety program.

The plan also has been revised to briefly describe the occupational and radiological safety air monitoring program, and how information from them will be used. See also responses to Original Specific Comments #12 and #25.

Action: As per response.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 3.2 *Page #:* 3-3

Line #: 12 to 16

Original Specific Comment #: 12

Comment: The text states that "chemical toxicants" released to air from operations at the OSDF will affect only remediation workers on the site and therefore are not included in the Air Monitoring Plan. That decision is inconsistent with information presented on page 3-1 (workers should be monitored under a health and safety program) and page 1-1 (the existing Occupational Air Monitoring Program will support the Air Monitoring Plan). Again, the Air Monitoring Plan should discuss in greater detail (1) any occupational-or health and safety-related ambient air monitoring activities that will be conducted and (2) how resulting data will be used to support the air monitoring program for the OSDF (See General Comment #6 and Specific Comment #11).

Response: The text at p. 3-1 in question under Original Specific Comment #11 has been revised as indicated in the response to that comment. The scope and primary focus of this OSDF Air Monitoring Plan is environmental air monitoring, not occupational and radiological safety. Occupational and radiological safety, and attendant air, medical, and physiological monitoring are covered by existing site-wide programs which are outside the scope of this plan. Although the focus of occupational and radiological safety programs are protection of worker safety, nevertheless, certain information from air monitoring conducted under those programs may be cause for modifications to work practices, including administrative and engineering controls.

Action: The text at p. 3-1 in question under Original Specific Comment #11 has been revised as indicated in the response to that comment. The plan has been revised to briefly describe the occupational and radiological safety air monitoring program, and how information from them will be used in relation to air emissions control and monitoring. See also responses to Original General Comment #6 and Original Specific Comments #11 and #25.

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Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 3.3

Page #: 3-5

Line #: Table 3-1

Original Specific Comment #: 13

Comment: *Footnote 3 indicates that the third column of Table 3-1 presents both DOE-derived concentration guidelines and measured radionuclide concentrations from two sampling locations. However, only a single set of numbers is presented. The footnote should be revised to identify more clearly the information presented in the third column.*

Response: The notes to Table 3-1 (now 3-2) have been revised to better indicate the information presented. Specifically, the entries for Notes (1) and (2) have been modified to indicate information source. Similarly, Note (3) has been revised to indicate, first, that the DCG concentrations presented have been converted to pCi/m³, and second, that the information source are tables bearing the titles indicated. The revised table is presented in the response to Original Specific Comment # 21.

Action: As per response. Also see Response to Original Specific Comment # 21.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 3.4.2

Page #: 3-7

Line #: 18 and 19

Original Specific Comment #: 14

Comment: *The text referring to "visual emissions monitored by certified Visual Emissions Evaluators" should be revised. U.S. EPA certification requirements for visual emissions monitoring are applicable only to 40 Code of Federal Regulations (CFR) 60, Appendix A, Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources. Method 9 is applicable to particulate air emissions from point sources, such as ducts, stacks, or roof vents, but is not applicable to fugitive dust sources. All anticipated particulate emissions from the OSDF will be in the form of fugitive dust; Method 22, Visual Determination of Fugitive Emissions from material sources and Smoke Emission from Flares, is a more appropriate method of visual emissions monitoring. Method 22 does not require certification of observers.*

Response: The method referenced has been corrected from Method 9 to Method 22 (both here and throughout the plan). As Method 22 does not require certification of observers, the text (both here and throughout the plan) has also been revised to delete mention of certification in regards to visual emissions evaluators.

Action: As per response.

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Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4.1

Page #: 4-1

Line #: 3 to 22

Original Specific Comment #: 15

Comment: Section 4.1 briefly states that both wind speed and wind direction are measured at FEMP. However, the text does not discuss how measurements of those parameters will be coordinated with the air monitoring program or used to interpret air monitoring results. The text should be revised to include such information.

Response: The plan has been revised to better present information from the site-wide plans and programs which govern the meteorological monitoring program which is the subject of this comment. The revision focuses on how meteorological monitoring data is used on-site in developing air monitoring programs, and in supporting annual 40 CFR Part 61 NESHAPs Subpart H compliance demonstration.

Action: As per comment.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4.2

Page #: 4-1

Line #: 25 to 30

Original Specific Comment #: 16

Comment: Section 4.2 briefly states that the Waste Methodology was applied to select appropriate fenceline air monitoring locations for the Fernald Site Environmental Monitoring Plan. This section should be expanded to include a discussion of the applications of the Waste Methodology to the selection of air monitoring locations for the OSDF.

Response: While the Waite Methodology was used to review and validate the minimum number and locations of site-wide FEMP fenceline ambient air monitors, it was not applied to the selection of air monitoring locations for the OSDF remedial action project. The OSDF air monitoring program relies on existing air monitoring station (AMS) locations to monitor potential public exposures due to OSDF emissions. Additional AMS locations will be added if the existing network does not meet the need for monitoring data, either from a site-wide perspective or from a project-specific perspective. The need for any additional AMSs, or any changes in location of AMSs, will be based primarily on the predominant wind directions and the need to have monitors located downwind from the OSDF under predominant wind directions and between the OSDF and the off-property public. The size and location of population centers, which is considered in the Waite Methodology, was not a factor in selecting OSDF monitoring locations.

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Action: The subject text has been revised with information from the Integrated Environmental Monitoring Plan, which governs the site-wide environmental air monitoring program and its attendant AMS network, to better present information summarizing the site-wide AMS network design basis. The Waite Methodology is but one of several factors or criteria which were used in that design basis.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4.3

Page #: 4-2

Line #: 1 to 18

Original Specific Comment #: 17

Comment: Section 4.3 suggests that five air monitoring stations in the existing Fernald Sitewide Environmental Monitoring Program (locations 2, 3, 4, 8, and 9) are sufficient to evaluate the effects of air quality on activities conducted at the OSDF. However, the Air Monitoring Plan contains no technical information to support this determination. The discussion of air monitoring locations in Section 4.3 should be expanded to provide, at a minimum, the following:

- *A figure showing the locations of the OSDF, the borrow area for the disposal facility, and the proposed air monitoring locations. The figure also should show the boundaries of FEMP, and the locations of potential receptors.*
- *A discussion of the methods used to select monitoring locations. If an air dispersion model was used in the selection process, the plan should identify the model used; describe the input parameters for the model (air emission rates and meteorological data) and the sources of those parameters; and summarize the results obtained from the model, including the predicted locations of maximum effects relative to the locations of potential receptors.*

Response: Figures from the Integrated Environmental Monitoring Plan have been added to illustrate the location of the OSDF and the monitoring locations described in the text. Text has also been added from that plan to describe the basis behind those monitoring networks.

Action: As per comment.

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Commenting Organization: U.S. EPA
Section #: 4.3 Page #: 4-2
Original Specific Comment #: 18

Commentor: Saric
Line #: 20 to 22

Comment: The text states that additional air monitoring stations may be installed if the proposed network of monitoring stations cannot adequately assess potential public exposure. The text should state the specific criteria that will be used to determine whether the proposed network is assessing potential public exposure adequately. The criteria should be incorporated into the periodic evaluations of the plan discussed in Section 7.4.

Response: The text in Section 7.4 which is the focus of the comment has been revised to clarify the intent. Redline and strikeout are used to indicate the changes: "The OSDF environmental air monitoring program will be reviewed at least annually to evaluate the effectiveness in meeting the OSDF air monitoring program objectives. The review will focus on, but not be limited to, the following areas of the program: • the number and location of OSDF AMSs, particularly in regard to prevailing wind direction and nearby off-property population."

Action: As per response.

Commenting Organization: U.S. EPA
Section #: 5.3.1 Page #: 5-2
Original Specific Comment #: 19

Commentor: Saric
Line #: 6 and 8

Comment: The text should cite Method 22, rather than Method 9, of visual monitoring of fugitive emissions. Also, see Specific Comment # 14.

Response: See Response to Original Specific Comment #14.

Action: See Action to Original Specific Comment #14.

Commenting Organization: U.S. EPA
Section #: 5.3.2 Page #: 5-2
Original Specific Comment #: 20

Commentor: Saric
Line #: 15 to 20

Comment: Section 5.3.2 proposes continuous sampling of ambient air, but proposes to analyze most target analytes only annually. Such infrequent analysis is not supported by any technical information presented in the Air Monitoring Plan; the proposal therefore should be revised. Table 3-1 presents predicted air concentrations of target analytes for the OSDF and shows that the predicted concentrations are below levels of concern.

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However, the predicted results apparently are based on (1) air emission models used to estimate the release of target analytes from activities at the OSDF and (2) air dispersion models used to estimate the air concentrations of target analytes downwind from the facility. The results of both models can be subject to significant uncertainties. During the initial stages of operations (for example, placement of different categories of waste or new stages of OSDF cell construction), analyses for target analytes should be conducted more frequently. If results of analysis demonstrates that air concentrations of target analytes are low and similar to previously predicted values, less frequent analysis can be considered.

Response: The inclusion of airborne particulate total uranium analyses on a bi-weekly basis, as explained under the response to Original Specific Comment #23, was included in the OSDF air monitoring program regime specifically to address the concern regarding frequency of analyses for the radionuclides of concern. See response to U.S. EPA Original Specific Comment #23.

Action: See response to U.S. EPA Original Specific Comment #23.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 6.2

Page #: 6-2

Line #: Table 6-1

Original Specific Comment #: 21

Comment: The list of target analytes in Table 6-1 is not completely consistent with the list of radionuclides evaluated that is presented in Table 3-1. Specifically, plutonium-239/240 and thorium 234 are included in Table 3-1, but not listed as target analytes in Table 6-1. Table 6-1 should be revised to include those analytes, or the text of Section 6.2 should explain why those analytes are not included.

Response: This comment, and a similar comment from OEPA (OEPA Original Comment # 70), have prompted a re-evaluation of the information presented in the former Tables 3-1 and 6-1. Table 3-1 (now Table 3-2) has been revised to better illustrate: (a) descending rank order of the radionuclides, based upon predicted airborne concentrations, now presented in column #3b of the table; (b) descending rank order of the radionuclides, based upon ratios of predicted airborne concentration to Derived Concentration Guideline (DCG), now presented in column #5b, and the basis for resequencing the presentation order in the table; (c) percentage contribution of each radionuclide to the total dose, now presented in column # 5c; and (d) cumulative percentage contribution of each radionuclide to the total dose, now presented in column #5d.

Table 3-2
COMPARISON OF PREDICTED AIRBORNE RADIONUCLIDE
CONCENTRATIONS TO THE DERIVED CONCENTRATION GUIDELINES

<u>1</u> #	<u>1</u> Alpha- Order	<u>2</u> Radionuclide	<u>3a</u> Predicted Concentration ⁽¹⁾ (pCi/m ³)	<u>3b</u> Rank Order	<u>3c</u> Percent of Total (%)	<u>3d</u> Cumulative Percent of Total (%)	<u>4</u> DCG ⁽²⁾ (pCi/m ³) ⁽³⁾	<u>5a</u> Predicted Concentration to DCG Ratio	<u>5b</u> Rank Order	<u>5c</u> Percent of Total (%)	<u>5d</u> Cumulative Percent of Total (%)
1	10	Thorium-230	1.3×10^{-4}	1	42.60	42.60	4.0×10^{-2}	3.2×10^{-3}	1	58.04	58.04
2	16	Uranium-238	1.3×10^{-4}	2	42.60	85.20	1.0×10^{-1}	1.3×10^{-3}	2	23.22	81.26
3	11	Thorium-232	6.6×10^{-6}	5	2.16	87.36	7.0×10^{-3}	9.4×10^{-4}	3	16.84	98.10
4	5	Radium-226	2.3×10^{-5}	3	7.54	94.90	1.0×10^0	2.3×10^{-5}	4	0.41	98.51
5	2	Neptunium-237	3.6×10^{-7}	12	0.12	95.02	2.0×10^{-2}	1.8×10^{-5}	5	0.32	98.83
6	9	Thorium-228	7.1×10^{-7}	10	0.23	95.25	4.0×10^{-2}	1.8×10^{-5}	6	0.32	99.15
7	4	Plutonium-239/240	3.3×10^{-7}	13	0.11	95.36	2.0×10^{-2}	1.7×10^{-5}	7	0.29	99.44
8	15	Uranium-236	1.1×10^{-6}	7	0.36	95.72	1.0×10^{-1}	1.1×10^{-5}	8	0.20	99.64
9	3	Plutonium-238	3.1×10^{-7}	14	0.10	95.82	3.0×10^{-2}	1.0×10^{-5}	9	0.18	99.83
10	14	Uranium-235/236	9.4×10^{-7}	9	0.31	96.13	1.0×10^{-1}	9.4×10^{-6}	10	0.17	99.99
11	6	Radium-228	5.3×10^{-7}	11	0.17	96.30	3.0×10^0	1.8×10^{-7}	11	0.00	100.00
12	7	Strontium-90	9.8×10^{-7}	8	0.32	96.63	9.0×10^0	1.1×10^{-7}	12	0.00	100.00
13	13	Uranium-234	7.2×10^{-9}	16	0.00	96.63	9.0×10^{-2}	8.0×10^{-8}	13	0.00	100.00
14	12	Thorium-234	7.9×10^{-6}	4	2.59	99.22	5.0×10^2	1.6×10^{-8}	14	0.00	100.00
15	8	Technetium-99	2.2×10^{-6}	6	0.72	99.94	2.0×10^3	1.1×10^{-9}	15	0.00	100.00
16	1	Cesium-137	1.9×10^{-7}	15	0.06	100.00	4.0×10^2	4.8×10^{-10}	16	0.00	100.00
TOTAL:			3.1×10^{-4}	=	0.00031		TOTAL:	5.6×10^{-3}	=	0.0056	

NOTES: (1) Source: Table G.1-23: Exposure Air Concentrations in the Vicinity of the Hypothetical Near-Property Public Receptor; Short-Term Risk Assessment; *Feasibility Study Report for Operable Unit 5* [DOE, 1995c].

(2) Source: Derived Concentration Guidelines (DCGs) for Concentrations of Radionuclides in Air Emissions; Radiation Protection of the Public and the Environment, DOE Order 5400.5.

(3) DCG concentrations in DOE Order 5400.5 have been converted to pCi/m³. Source: Tables 5-4 and 5-5: Measured Radionuclides at AMS 9/9A and AMS 8, *Fernald Site Environmental Monitoring Plan* [FERMCO, 1995a].

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Two radionuclide isotopes — Plutonium-239-240 (entry # 7) and Thorium-234 (entry # 14) [not Neptunium as suggested in OEPA Original Comment #70] — are presented among the 16 in Table 3-2 with predicted airborne concentrations, but are omitted from Table 6-1 (now 7-1) which illustrates the minimum airborne particulate radionuclide analysis regimen. From the new information presented in Table 3-2 (included herein), it is apparent that for the first of these, Plutonium-239/240, rank order #7 per (b) above, contributes only 0.30 percent of the total predicted dose. Further, for the second isotope, Thorium-234, rank order #14 per (b) above, contributes so little to the predicted dose that its percentage contribution does not register to two decimal places when expressed as a percent. From an analysis of the cumulative percent contribution to total predicted dose presented in column #5d, the first 6 rank ordered isotopes, all of which are included in the minimum airborne particulate radionuclide analysis regimen presented in Table 7-1, account for 99.15 percent of the total predicted dose. Note that Table 7-1 presents the analysis regimen which is being and has been used by the site-wide environmental air monitoring program. For these reasons, addition of the two isotopes discussed in this comment would add little valuable information. Therefore, DOE sees no compelling reason to change the airborne particulate radionuclide analysis regimen presented in Table 7-1.

Action: Table 3-1 has been revised and now appears as Table 3-2. No changes to the airborne particulate radionuclide analysis regimen presented in Table 6-1 (now 7-1). The text in Section 7 related to Table 7-1 has been revised to discuss the reasons for not including the analytes under discussion in this comment.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 6.2.2

Page #: 6-4

Line #: 12

Original Specific Comment #: 22

Comment: The text states that laboratory procedures for target analytes are listed in Table 6-1. However, the table includes only a one- or two-word description of the analytical method that will be used. The text should be revised to include a more complete discussion of laboratory procedures and associated quality assurance requirements (See General Comment # 5).

Response: The revised text indicates that the analytical regimen summarized in the subject table (now Table 4-1) is governed by the site-wide environmental air monitoring regimen — and its associated data quality objectives, analytical support levels, and quality assurance requirements — presented in the Integrated Environmental Monitoring Plan.

Action: The text has been revised per the response, and now appears in Section 4.

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Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 7.2

Page #: 7-1

Line #: 21 to 24

Original Specific Comment #: 23

Comment: Section 7.2 states that analyses for the concentration of total uranium in air samples will be conducted every two weeks, but that analysis for other radionuclides will be conducted only once per year. Even if one assumes that "total uranium" represents natural uranium, the uranium chemical analysis will provide no information about most of the other target radionuclides. If detection limits for the other radionuclides are of concern, a two-tiered analysis for those analytes could be considered. Gross alpha, beta, and gamma analysis could be conducted as the first tier, followed by spectroscopy as the second tier, only if the results of gross analysis exceed specified limits.

Response: Select information from Table 3-2 [formerly 3-1, presented herein in the response to Original Specific Comment #21] is needed to evaluate the utility and timeliness of bi-weekly airborne particulate uranium analysis as a component to the OSDF air monitoring program. The pertinent information is presented below, using column and entry numbering from Table 3-2.

<u>2</u>		<u>3c</u>	<u>5c</u>
#	Radionuclide	Percent Contribution to Total Predicted Airborne Activity	Percent Contribution to Total Predicted Dose
2	Uranium-238	42.60	23.22
8	Uranium-236	0.36	0.20
10	Uranium-235/236	0.31	0.17
13	Uranium-234	0.00	0.00
Subtotal		43.27	23.58

Thus, for the OSDF air monitoring program, bi-weekly airborne particulate uranium analytical data presents timely and frequent information which is indicative of approximately 45 percent of the predicted airborne concentration on an activity basis and approximately 25 percent of the total predicted dose. The bi-weekly frequency means that two to three sets of data are available each month for a yearly total of 26 sets of data on this indicator.

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A review of historical site-wide environmental air monitoring data and its use in calculating doses indicates that uranium contributes the largest fraction (in excess of 90%) of the dose due to inhalation of airborne particulates. Furthermore, most of the other target radionuclides are radioactive decay products of uranium and can be assumed to be at some level of equilibrium with their uranium parent. Other target radionuclides (Th-232, fission and activation products) which are not related to uranium through a decay chain can be scaled to the uranium concentration in a waste stream. This allows the airborne particulate total uranium results to be used as an indicator for other radionuclide concentrations. Because it is the primary radiological contaminant in FEMP's remediation waste, and the handling of remediation waste does not involve chemical processes which could selectively concentrate and release other target radionuclides, uranium is expected to remain the major contributor to dose throughout the operation of the OSDF.

Thus, the significance of uranium in contributing to air inhalation doses and the ability to use total uranium results as a coarse indicator (or scaler) for the concentrations of other radionuclides justifies relying on airborne particulate total uranium analysis for environmental air monitoring.

More frequent (semi-annual or quarterly) analysis for the other airborne particulate target radionuclides is warranted *if* total uranium results indicate higher than expected airborne uranium concentrations. Gross alpha, gross beta, and gamma analysis can provide useful trending data to some monitoring programs, but given the significance of uranium as an airborne contaminant at the FEMP, airborne particulate total uranium analysis combined with periodic analysis for the other target radionuclides provides more useful data.

It is on this basis that DOE believes airborne particulate uranium concentration is a timely and useful indicator parameter, not only for the OSDF environmental air monitoring program but also for the FEMP site-wide environmental air monitoring program.

Action: The text (formerly Section 7, now in Section 4) has been revised to present a discussion of the basis for the analytical regime.

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Commenting Organization: U.S. EPA**Commentor:** Saric**Section #:** 7.2**Page #:** 7-2**Line #:** 2**Original Specific Comment #:** 24

Comment: The text should cite Method 22, rather than Method 9, for visual monitoring of fugitive emissions. Also see Specific Comment # 14.

Response: See Response to Original Specific Comment #14.

Action: See Action to Original Specific Comment #14.

Commenting Organization: U.S. EPA**Commentor:** Saric**Section #:** 7.2**Page #:** 7-2**Line #:** 8 to 10**Original Specific Comment #:** 25

Comment: The text summarizes potential risks to remedial workers on the site. However, as stated in General Comment # 6 and Specific Comment #s 11 and 12, the Air Monitoring Plan should discuss the specific air monitoring activities that will be conducted to evaluate those potential risks.

Response: Occupational and radiological safety are covered under a site-wide health and safety program. Occupational and radiological safety are outside the scope of this plan.

Action: The OSDF Air Monitoring Plan has been revised to indicate that occupational and radiological safety are covered under a site-wide health and safety program and are outside the scope of this plan. The plan has been revised to briefly describe the occupational and radiological safety air monitoring program, and how information from them will be used in relation to air emissions control and monitoring. See also responses to Original General Comment #6 and Original Specific Comments #11, #12, and #25.

Commenting Organization: U.S. EPA**Commentor:** Saric**Section #:** 7.3.2**Page #:** 7-3**Line #:** 15 to 22**Original Specific Comment #:** 26

Comment: Specific Comment #23 also applies to Section 7.3.2.

Response: See Response to Original Specific Comment #23.

Action: See Action to Original Specific Comment #23.

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BORROW AREA MANAGEMENT AND RESTORATION PLAN**Commenting Organization:** U.S. EPA**Commentor:** Saric**Section #:** 4.4**Page #:** 4-2**Line #:** 31**Original Specific Comment #:** 27

Comment: *The text indicates that the haul roads will be constructed of suitable material that conforms to standard specifications established by the Ohio Department of Transportation (ODOT). The applicable ODOT standard specifications for road material should be stated, or a reference should be made to the design specifications for the haul roads.*

Response: DOE agrees that material requirements should be stated in the contract specifications.

Action: Detailed material requirements for haul roads are given in Section 02230 of the specifications. Where appropriate, the BAMR Plan submitted with the Prefinal Design Package has been referenced to the contract specifications.

Commenting Organization: U.S. EPA**Commentor:** Saric**Section #:** 5.1**Page #:** 5-1**Line #:** 4 - 11**Original Specific Comment #:** 28

Comment: *The text describes the spatial arrangement of the early and late staging areas. Inclusion of a figure depicting the areas, the swale, the topography, and the surface water flow would help clarify the paragraph and the section.*

Response: The intent of the BAMR Plan is to provide the Subcontractor with basic requirements for operating the borrow area. Areas available for use during specific construction stages will be delineated with appropriate procurement packages.

Action: The BAMR Plan has been revised in the Prefinal Design Package to refer surface-water management issues to the SWMEC Plan.

Commenting Organization: U.S. EPA**Commentor:** Saric**Section #:** 5.3**Page #:** 5-3**Line #:** 20 and 21**Original Specific Comment #:** 29

Comment: *The text states that "erosion and sediment controls shall be implemented in the vicinity of sediment controls." The statement lacks clarity and should be revised to distinguish*

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between the sediment controls that will be implemented from the sediment controls that are currently in the proposed vicinity of the OSDF.

Response: The second occurrence in the phrase of "sediment controls" was intended to be "sediment basins". However, the intent of the BAMR Plan is to provide the Subcontractor with basic requirements for operating the borrow area.

Action: The BAMR Plan has been revised in the Prefinal Design Package to refer surface-water management issues to the SWMEC Plan.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 7.2.1

Page #: 7-1

Line #: 28

Original Specific Comment #: 30

Comment: The text identifies recommended seed mixtures. The text does not state which mixtures have been selected for the restoration of the borrow area. The text should be revised to state which seed mixtures will be used at the borrow area.

Response: The intent of the BAMR Plan is to provide the Subcontractor with basic requirements for operating the borrow area.

Action: Section 7 of the BAMR Plan has been deleted in the Prefinal Design Package. Surface-water management issues have been referred to the SWMEC Plan.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 7.3.3

Page #: 7-3

Line #: 34

Original Specific Comment #: 31

Comment: The text refers to "Sheet No. 12 titled Borrow Area Restoration Plan." Sheet No. 12 is not included in the Borrow Area Management and Restoration Plan. The text should be revised to specify where Sheet No. 12 can be found.

Response: Because Section 7 has been deleted pursuant to the above comment, this concern has been eliminated.

Action: Section 7 of the BAMR Plan has been deleted in the Prefinal Design Package. Surface-water management issues have been referred to the SWMEC Plan.

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Commenting Organization: U.S. EPA**Commentor:** Saric**Section #:** 7.6.3**Page #:** 7-10**Line #:** 34**Original Specific Comment #:** 32

Comment: The text refers to a "cleanout elevation specified on the drawings." The text does not identify the specific title of the drawings, nor does it indicate where the drawings can be found. The text should be revised to provide a complete reference to the drawings.

Response: Because Section 7 has been deleted pursuant to the above comment, this concern has been eliminated.

Action: The SWMEC Plan states that sediment basins shall be cleaned when they reach 60 percent of their design capacity.

Commenting Organization: U.S. EPA**Commentor:** Saric**Section #:** Appendix B, Table 4**Page #:** 16**Line #:** Last row**Original Specific Comment #:** 33

Comment: The information provided in the last row of the table contradicts the information set forth in paragraph that follows the table. The table includes a seeding scenario for slopes greater than 33 percent; however, the text indicates that the maximum slopes allowed in the plan is 33 percent. The text and table should be revised to resolve the discrepancy.

Response: The seeding table was intended to cover all potential conditions at the OSDF. The intent of the BAMR Plan is to provide the Subcontractor with basic requirements for operating the borrow area.

Action: The seeding table has been revised and moved to Section 02930 of the specifications for the Prefinal Design Package.

CONSTRUCTION QUALITY ASSURANCE PLAN

Commenting Organization: U.S. EPA**Commentor:** Saric**Section #:** 2-2**Page #:** 2-2 and 2-3**Line #:** 25-21 and 1 to 5**Original Specific Comment #:** 34

Comment: The text indicates that the test pad program has been completed. That information is incorrect. The test pad program is scheduled to be conducted in mid-May 1996. The text should be revised to indicate the current status of the test pad program.

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Response: DOE agrees with the comment. The Test Pad Program began in mid-May and is currently scheduled to be completed in mid-July 1996.

Action: Text has been changed to read as follows: "As part of the OSDF design, a compacted clay liner test pad program (TPP) will be conducted using soil obtained from the area of soil borrow. During the TPP, various test pads will be constructed using equipment and/or techniques that will be suitable for use in construction of the OSDF clay liner. Laboratory and field permeability testing will be performed during the TPP to define the compaction conditions that will yield a soil liner with a hydraulic conductivity of not greater than 1×10^{-7} cm/s. The TPP shall meet the requirements set forth in OAC 3745-27-08(C)(1)(m)."

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.2.2

Page #: 2-7

Line #: 1

Original Specific Comment #: 35

Comment: Subsection 2.2.2 discusses the leachate collection system. A similar subsection should be included that discusses the leak detection system.

Response: DOE agrees with this comment.

Action: Subsection 2.2.3 title "Leachate Detection System" has been added to the CQA Plan for the Prefinal Design Package.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4

Page #: 4-2, Figure 4-1

Line #: NA

Original Specific Comment #: 36

Comment: The following comments concern the organization chart:

- a. The chart eventually (by the prefinal submission date should include the names of the people who will hold the position indicated)
- b. Each position included on the chart should be discussed in the text. In the current document, positions are not addressed for the following areas: project management, quality assurance, radiation protection, health and safety, and construction engineering.

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- c. *The construction subcontractor's field representative is discussed in the text but not included in the chart. The chart should be modified to add that position.*
- d. *Lines of communication and authority should be defined more clearly.*

Response: During a recent meeting with both USEPA and OEPA an agreement was reached to show the OSDF project structure without names. DOE commits to provide both agencies the names of the current project personnel on a quarterly basis. Each position presented in the chart will be discussed in the CQA Plan and the RAWP. The proposed chart was presented as part of the response to question number 10.

Action: Develop new organization chart.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.2 Page #: 4-3 Line #: 28 and 27
Original Specific Comment #: 37

Comment: The text states that the resident engineer is responsible for approving all design and specification changes on Line 20, but, on Line 27, the text states that the resident engineer shall have the authority to only recommend modifications for approval by the CCM. This discrepancy should be corrected.

Response: The intent of these statements is discussed more fully in the answer to General Comment # 10. It is the resident engineer's responsibility to review and approve the technical requirements of the submittals, drawings and specifications. The CCM (now the CM) is the only person that can make contract changes.

Action: None.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.4 Page #: 4-5 Line #: 20
Original Specific Comment #: 38

Comment: The relationship between the resident engineer and the subcontractor's field representative is not defined clearly. This information should be clarified.

Response: See response to General Comment #10.

Action: Add clarification to CQA Plan.

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Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.5 Page #: 4-6 Line #: 16
Original Specific Comment #: 39

Comment: *The text states that the CQC consultant is independent of the construction CCM; however, the organization chart on page 4-2 seems to indicate that the CQC reports to the CCM. If the intent is that the CQC be independent only from the construction subcontractor, the text should be revised to indicate this. If the CQC is independent of the CCM, the organization chart should be revised, possibly to indicate that the CQC consultant reports to the FERMC O quality assurance group.*

Response: See response to General Comment #10.

Action: As stated in response to General Comment #10.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.5 Page #: 4-8 Line #: 30
Original Specific Comment #: 40

Comment: *The text states that the CQC consultant is responsible for monitoring compliance with specifications for construction materials. The text should state clearly whether such monitoring is another review of shop drawings or a review of materials delivered to the site to confirm that they match the approved shop drawings.*

Response: DOE agrees with this comment.

Action: The text of the CQA Plan has been revised for the Prefinal Design Package to state "The CQC Consultant will be responsible for monitoring the compliance of construction materials delivered to the site with the submittals and/or shop drawings previously approved by the Construction Manager".

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.5 Page #: 4-12 Line #: 20
Original Specific Comment #: 41

Comment: *The text states that the CQC consultant assures that the surface water drainage is correct. The CQC consultant only monitors the work; the construction subcontractor assures that the work is correct. The text should be modified to so indicate.*

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Response: DOE agrees with this comment.

Action: The text of the CQA Plan has been revised in the Prefinal Design Package to state, "monitoring surface-water drainage in the areas of soil and geosynthetic material stockpiles."

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4.6

Page #: 4-13

Line #: 25

Original Specific Comment #: 42

Comment: The text in this section should be revised to address the issue raised regarding CQC monitoring requirements in Specific Comment No. 40.

Response: The intent of this comment is unclear. The cited text is describing the definitions of the Soils CQC Laboratory.

Action: No action is required at this time.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4.9

Page #: 4-18

Line #: 10

Original Specific Comment #: 43

Comment: The text states that the construction subcontractor submits the installer's license to the CCM with the bid. The specifications state that the license is submitted 14 days before mobilization (02270-4, Line 27). The text should be corrected.

Response: DOE agrees with this comment.

Action: The CQA Plan was revised for the Prefinal Design Package to state "The geotextile, geomembrane, and GCL manufacturers shall meet the qualifications outlined in Sections 02714, 02770, and 02772 of the specifications, respectively".

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 5.4

Page #: 5-6

Line #: NA

Original Specific Comment #: 44

Comment: The text should state clearly which party generates the final documentation that the CQC consultant submits to the CCM. For example, the record drawings and the

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professional engineer (PE) sign-off should be completed by the construction subcontractor, not by the CQC consultant.

Response: DOE has engaged the services of an independent firm to perform CQC functions in accordance with current industry practice. The primary function of the CQC Consultant is to certify that the project has been constructed in accordance with approved plans and specifications.

Action: No action is required.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 7.1

Page #: 7-1

Line #: 14 and 17

Original Specific Comment #: 45

Comment: The text states that the hydraulic conductivity of the leachate layers should be 1×10^{-1} centimeters per second (cm/s) "or less." To conform to the construction specification in Section 02710: Granular Drainage Layer, that statement should be revised to read "or greater."

Response: DOE agrees with this comment.

Action: The suggested change has been made for the Prefinal Design Package to conform to the specifications.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 7.1

Page #: 7-2

Line #: 2

Original Specific Comment #: 46

Comment: The text states that the hydraulic conductivity of the leachate layers should be 1×10^{-1} cm/s "or less." To conform to the construction specification in Section 02710: Granular Drainage Layer, that statement should be revised to read "or greater."

Response: DOE agrees with this comment.

Action: The suggested change has been made for the Prefinal Design Package to conform to the specifications.

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Commenting Organization: U.S. EPA
Section #: 8.5 Page #: 8-7
Original Specific Comment #: 47

Commentor: Saric
Line #: 14

Comment: *The text states that the responsibility for transportation and handling of geomembranes rests with any of several parties. FERMCO has a contract only with the construction subcontractor; therefore, the construction subcontractor should be responsible for all materials and construction. The text should be corrected.*

Response: DOE agrees with this comment.

Action: The CQA Plan has been revised for the Prefinal Design Package to state "*The CQC Consultant shall monitor the transportation, handling, and storage of the geomembrane on-site.*"

Commenting Organization: U.S. EPA
Section #: 8.6 Page #: 8-8
Original Specific Comment #: 48

Commentor: Saric
Line #: 1

Comment: *This section discusses conformance testing that the CQC consultant will perform on the geomembrane delivered to the site. Section 8.3.3 discusses the quality control procedures and certification required of the geomembrane manufacturer. Section 8.3.4 discusses the CQC consultant's plant visit to verify that the manufacturer follows the quality control procedures submitted. The necessity of spending additional money to test products that the manufacturer has tested and certified, using a procedure acceptable to FERMCO, should be reviewed.*

Response: DOE has reviewed the procedures and concludes that the CQA Plan should be followed. The geomembrane, GCL, and geotextile (geosynthetics) conformance testing frequencies and procedures described in the CQA Plan conform to the minimum conformance testing requirements set forth in U.S. EPA Technical Guidance Document EPA/600/R-93/182 dated September 1993. Furthermore, the geosynthetics conformance testing program is consistent with the state-of-the-art and widely accepted industry standards.

Action: No action is required.

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Commenting Organization: U.S. EPA
Section #: 8.10 Page #: 8-16
Original Specific Comment #: 49

Commentor: Saric
Line #: 28

Comment: *The text states that the CQC consultant must verify several items during the seaming of the geomembrane. The construction subcontractor and installer are responsible for the work and should be required to certify that the seaming is done correctly. Additions to the text of a statement to that effect should be considered.*

Response: DOE has considered the comment and concurs with the language of the CQA Plan. Verification of the Subcontractor's work is an important aspect of the CQC Consultant duties and does not relieve the Subcontractor of any of his responsibilities.

Action: No action is required.

Commenting Organization: U.S. EPA
Section #: 8.12 Page #: 8-33
Original Specific Comment #: 50

Commentor: Saric
Line #: 24

Comment: *The text states that the manufacturer and the installer retain ownership and responsibility until acceptance. Since FERMCO has a contractual relationship only with the construction subcontractor, the responsibility should be that of the construction subcontractor. This circumstance should be reviewed.*

Response: DOE has reviewed the probable terms of FERMCO's future contract with the Subcontractor and agrees with this comment.

Action: The CQA Plan has been revised for the Prefinal Design Package to reflect the Subcontractor's responsibility for the geosynthetics until acceptance by the Construction Manager as required by Section 02771 of the Specification.

Commenting Organization: U.S. EPA
Section #: 8.12 Page #: 8-34
Original Specific Comment #: 51

Commentor: Saric
Line #: 7

Comment: *The text states that the CQC consultant shall certify that the installation has been constructed in accordance with plans and specifications. FERMCO also should obtain certification from the installer and the construction subcontractor. This revision should be considered.*

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Response: DOE has considered the suggested revision and concurs with the language of the CQA Plan.

Action: No action is required.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 9.6

Page #: 9-4

Line #: 23

Original Specific Comment #: 52

Comment: The text in this section should be revised to address the leachate layer conformance testing issues raised in Specific Comment No. 48.

Response: See response to Specific Comment No. 48.

Action: No action is required.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 10.6

Page #: 10-5

Line #: 1

Original Specific Comment #: 53

Comment: The text in this section should be revised to address the geomembrane conformance testing issues raised in Specific Comment No. 48.

Response: See response to Specific Comment No. 48.

Action: No action is required.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 10

Page #: NA

Line #: NA

Original Specific Comment #: 54

Comment: There is no discussion of the need to certify the installation of the geotextile. The need for such a discussion should be reviewed and the discussion added, if necessary.

Response: Geotextile installation is usually not as critical or complex as geomembrane installation and therefore there is not as strict a requirement for testing. The CQC Consultant will

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certify its installation to the proper functioning of the disposal cells based on visual monitoring only.

Action: No action is required.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 12.3

Page #: 12-2

Line #: 3 and 10

Original Specific Comment #: 55

Comment: The text states that shop drawings must be submitted 10 working days before installation of materials begins. It also states that no materials may be ordered before the shop drawings have been approved. Ten days is not enough time for the review and approval of shop drawings and the work sequence described. This discussion should be reviewed and clarified, as necessary.

Response: Per revised technical specifications in the Prefinal Design Package, it is required to submit shop drawings (Submittals) within 30 calendar days from "Notice to Proceed." For products which are not required immediately for installation, this submittal requirement will be 45 to 60 calendar days from "Notice to Proceed." Submittal requirements in the specification will provide a minimum of 15 calendar days for review and approval and a minimum of 30 calendar days for the procurement process.

Action: Technical specifications revised in the Prefinal Design Package to include this submittal requirement.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 13.3

Page #: 13-1

Line #: 19

Original Specific Comment #: 56

Comment: The text in this section should be revised to address the conformance testing issues raised in Specific Comment #48.

Response: Conformance testing of electrical components is not a requirement of the CQA Plan.

Action: No action is required.

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Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 15.3

Page #: 15-1

Line #: 20 and 21

Original Specific Comment #: 57

Comment: *The CCM cannot be responsible for notifying the CCM; this text should be corrected.*

Response: DOE agrees with this comment.

Action: The CQA Plan has been revised in the Prefinal Design Package to eliminate this requirement.

SYSTEMS PLAN

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 1.2, Figure 1-2

Page #: 1-2

Line #: NA

Original Specific Comment #: 58

Comment: *This figure shows the construction details of the cover and bottom liners; however, the construction details of the side liner are not shown. Figure 1-1 should be revised to show the construction details of the side liner, or a figure showing those details should be added to the systems plan.*

Response: The liner detail is identical for the bottom and the side slopes.

Action: No action is required.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 1.2, Table 1-1

Page #: 1-3

Line #: NA

Original Specific Comment #: 59

Comment: *The text refers to disposal cells, but no figure showing the locations of various cells in the OSDF is included in the systems plan. The systems plan should be revised to include or refer to a figure that shows the locations of all disposal cells.*

Response: A readable figure showing the locations of the various cells of the would have to be very large in size. Therefore, such a figure was not included in the Systems Plan. The design drawings show the locations of the OSDF cells in detail. Copies of the design drawings are expected to be available on-site.

Action: No action is required.

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Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 1.3

Page #: 1-4

Line #: 4

Original Specific Comment #: 60

Comment: *Bullet #2 uses the phrase "and monitoring, the" It is recommended that this phrase be revised to read "monitoring, and maintaining the"*

Response: The leachate management system will be maintained in good working order. The only question is who will maintain this system. It is a contractual matter and DOE would prefer to leave the second bullet as it currently is written. At this time, discussions are underway to determine which bargaining unit will perform this function.

Action: No action is required.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.4

Page #: 2-3

Line #: 33 to 38

Original Specific Comment #: 61

Comment: *The text refers to other criteria applicable to the systems plan that consist of industry-standard practices that have proven effective at other waste disposal facilities. However, such industry-standard practices are not listed in the text. The text should be revised to list the industry-standard practices referred to in the text.*

Response: DOE agrees with this comment.

Action: The Systems Plan will be revised in the Prefinal Design Package to include industry-standard practices throughout the text where applicable.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 3.1

Page #: NA

Line #: NA

Original Specific Comment #: 62

Comment: *The text refers to the pipes and manholes of the leachate collection system and leak detection system and to the biodenitrification surge lagoon. However, no drawing showing the locations of these items is included in the systems plan. To help the reader understand the discussion in the text, the systems plan should be revised to include a drawing that shows adequately the locations of all pipes, manholes, and other items referred to in the text.*

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Response: The design drawings for the OSDF and the Leachate Conveyance System will show all the components of the leachate collection, leak detection, leachate transmission systems, and biosurge lagoon in detail. These drawings are expected to be available on-site.

Action: No action is required.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 3.2

Page #: 3-4

Line #: 9 to 15

Original Specific Comment #: 63

Comment: The text states that, during winter months, the temporary force main must be covered by a soil cover at least one foot thick for frost protection. The text should be revised to indicate the depth of penetration of frost at the site.

Response: In the Prefinal Design Package, the temporary forcemain has been replaced with a temporary gravity line. This line will be covered by at least a 3-ft (0.9-m) thick soil cover for frost protection.

Action: No additional action is required.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 3.3

Page #: 3-5

Line #: 9 to 10

Original Specific Comment #: 64

Comment: The text refers to requirements for construction acceptance testing; however, the requirements are not provided in the systems plan. The text should be revised to include the requirements for construction acceptance testing or to refer to a document that sets forth those requirements.

Response: The Construction Acceptance Testing Procedure #CT-2.3.5 will be followed during construction acceptance testing activities. The specific construction acceptance test requirements will be addressed in the applicable contract specifications.

Action: Include Construction Acceptance Testing Procedure #CT-2.3.5.

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Commenting Organization: U.S. EPA
Section #: 3.3 Page #: 3-6
Original Specific Comment #: 65

Commentor: Saric
Line #: 1 to 4

Comment: *The text states that once impacted material is placed in a cell, all storm water will then be pumped to the FEMP storm water management system. This approach is not acceptable. Once impacted material is placed into a cell, all water that comes into contact with that material should be considered leachate and should be managed as leachate. The text should be revised to address this issue.*

Response: The issue raised centers on when stormwater becomes leachate. There are two definitions of leachate which are helpful in determining when stormwater becomes leachate. Both these definitions imply an extended contact time between a liquid and a waste reflecting a physical process (percolation, etc.) whereby pollutants from the waste are imparted to a water and become concentrated in the water due to this extended contact time. Stormwater runoff on the other hand does not carry this connotation of extended contact.

40 CFR 257.2

Leachate means liquid that has passed through or emerged from solid waste and contains soluble suspended or miscible materials removed from such waste.

40 CFR 260.10

Leachate means any liquid, including any suspended components in the liquid that has percolated through or drained from hazardous waste.

Stormwater which falls onto a waste and is quickly drained into a conveyance more closely resembles the definition of stormwater associated with industrial activity rather than that of leachate.

40 CFR 122.26(b)(14)

Stormwater associated with industrial activity means the discharge from any conveyance which is used for collecting and conveying stormwater and which is directly related to manufacturing, processing or raw materials storage areas at industrial plants. For the categories of industries identified in subparagraphs (i) through (x) of this subsection the term includes but is not limited to stormwater discharges from...material handling sites; refuse sites;...sites used for the residual treatment, storage, or disposal.... For the purposes of this paragraph material handling activities include the storage, loading and unloading, transportation, or

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conveyance of any raw material, intermediate product, finished product, by-product or waste product.

(iv) Hazardous waste treatment storage, or disposal facilities including those that are operating under interim status or a permit under Subtitle C of RCRA;

(v) Landfills, land application sites, and open dumps that receive or have received any industrial wastes (waste that is received from any of the facilities described under this subsection) including those that are subject to regulation under Subtitle D of RCRA;

This type of flow is a wet weather flow subject to the high volume short duration discharges which are more suitably handled through the site controlled stormwater system in accordance with the Operable Unit 5 ROD (i.e. through the Stormwater Retention Basin and subsequently treated through the AWWT 700 gpm system). Additional benefit is realized by reducing the hydraulic burden on the Bio-Surge Lagoon (the discharge location of process wastewaters such as leachate) and the downstream AWWT 400 gpm system (which is expected to receive additional process wastewater discharges from OU 1 and OU4). Please note that this water will be treated in an equivalent manner through the stormwater system as it would through the process wastewater system.

DRAFT REMEDIAL ACTION WORK PLAN

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 1.4

Page #: 1-7

Line #: NA

Original Specific Comment #: 66

Comment: *The title of Figure 1-2 is OU2 Remedial Action Lead Project Personnel. The correct title of Figure 1-2 should be OSDF Lead Project Personnel. In addition, the names of the project personnel assigned to specific positions for the OSDF Project should be included in Figure 1-2. It is understood that the personnel assigned to this project may change as the project progresses; however, the lines of authority, responsibility, and communication should be stated clearly. If there are any changes in lead project personnel, DOE should notify the regulatory agencies in writing. Such notification will serve as an addendum to the work plan. In addition, the figure lists an engineering manager and an operations manager. The job descriptions for those positions are not discussed in Section 1.4 of the RAWP. The text should be revised to include a discussion of the job descriptions of the engineering manager and the operations manager.*

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Response: Figure 1-2 has been renumbered Figure 1-4 and the title has been changed to "On-Site Disposal Facility Organization Chart" to reflect the lines of communication between the lead project personnel and support organizations. The project leader has been identified on the organizational chart. Other project personnel names will be provided on a quarterly basis. Section 1.4 has been modified to reflect the new FERMCO organization and leadership structure.

The third paragraph on page 1-8 and its following bullets have been replaced with the following:

"The Fernald Environmental Restoration Management Corporation (FERMCO) OSDF Project Manager will provide the overall project management and technical guidance to the OSDF Project Team. The OSDF Project Team will provide all of the necessary technical, regulatory, and administrative input required for the OSDF Remedial Action Project, under the direction of the OSDF Project Manager. The OSDF Project Team will include the following FERMCO positions:

- Engineering Manager
- Construction Manager
- Health and Safety
- Quality Assurance representative

The project team will include the following subcontractors:

- OSDF Subcontractor
- Resident Engineer
- Subcontractor(s) to the OSDF Subcontractor
- Construction Quality Control (CQC) Consultant

The Construction Manager (CM) will direct the daily activities for construction and placement of impacted material in the OSDF. The primary organizations reporting to the CM and their responsibilities include:

- OSDF Subcontractor — construct and fill OSDF
- CQA Consultant — CQA testing and certification.
- Resident Engineer — review and approval of technical requirements on the OSDF project.

The OSDF Subcontractor and CQC Consultant will support the construction, placement, and closure of the OSDF through direct subcontracts with FERMCO. These organizations will report contractually to the OSDF Project Manager. They will

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coordinate daily work activities with, and take technical direction within the scope of their contract from, the CM.

The Resident Engineer will provide support to the CM in interpreting the drawings and specifications, improvement opportunities, and changes to the OSDF project to assure that changing conditions or modifications are consistent with the OSDF design. The Resident Engineer will report contractually to the OSDF Project Manager.

FERMCO's Quality Assurance representative(s) will report directly to and support the OSDF Project Manager in oversight of OSDF remediation activities.

Action: Figure 1-4 has been modified and Section 1.4 has been modified to reflect the new FERMCO organization and leadership structure. Note that the names of the project leader identified on the organizational chart presented in Figure 1-4, and that of other project personnel, will be provided on a quarterly basis.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.2

Page #: 2-3

Line #: 18

Original Specific Comment #: 67

Comment: The text discusses the role of the CCM. It is unclear whether the CCM is the construction manager identified in Figure 1-2 or another person. The text and Figure 1-2 should be revised so that project position titles are used consistently throughout the RAWP.

Response: The Construction Contracts Manager is the title of the person responsible for directing the OSDF subcontractors. References to the Construction Contracts Manager have been changed to Construction Manager.

Action: Revise Figure 1-2.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.5.3

Page #: 2-11

Line #: 22

Original Specific Comment #: 68

Comment: Table 2-1 discusses remedial action project milestones for the OSDF. Table 2-1 should be revised to include the milestones for implementation of long-term monitoring and maintenance of the OSDF, an activity that is specified in the RAWP. In addition, a construction schedule that indicates what cells will be constructed and in what time frame should be included in the RAWP.

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Response: Please see response to General Comment #15.

Action: As stated in the response to General Comment #15.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.6

Page #: 2-12

Line #: 12 to 16

Original Specific Comment #: 69

Comment: *The text discusses the initial construction of the OSDF, including excavation and testing of shallow surface soil and certification that the area is not contaminated. Excavation of surface soil and certification of a "clean" area appear to be beyond the scope of the OU 2 OSDF activities. Excavation of soil and certification for site preparation should be included in the scope of the sitewide soil excavation plan, with the area of the OSDF detailed in the Remedial Action Work Plan for the Soil Remediation Project Area I. The text should be modified to include that reference. The text does not specify the procedures for testing the excavated shallow soil or identify the location at which the excavated soil will be stockpiled. The text also should clarify whether staging areas for the temporary holding of demolition debris and soil will be constructed before the initial construction of the OSDF.*

Response: The excavation of soil and certification of areas to be cleared for OSDF construction is included in the Area 1A soil remediation work plan. A reference to this document has been added to Section 2.6.

The location of impacted stockpiles is shown on Drawing G-2. Section 2.6 in the text has been modified to state that the stockpiles will be constructed as material balances require.

Action: As stated.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.6

Page #: 2-12

Line #: 23

Original Specific Comment #: 70

Comment: *The text discusses the sequence of construction of the individual cells of the OSDF. Inclusion of a figure showing the configuration and sequence of construction of the individual cells of the OSDF and an approximate construction time table should be included.*

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Response: The cells will be constructed in sequence from 1 through 8 as impacted material becomes available for disposal. The approximate time frame for OSDF construction is 10 years. Drawing G-2 in the OSDF plans shows a typical configuration of cells under construction, filling, and closure.

Action: The reader is referred to drawing G-2.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 3.0

Page #: 3-1

Line #: 25 to 27

Original Specific Comment #: 71

Comment: This section provides a general discussion of permit requirements pertinent to the OSDF and refers to a support plan being submitted for the OSDF remedial action. As stated in general comment #13, the text should be revised to include a brief summary of the permitting requirements for the OSDF and how those requirements will be met. In addition, the text should include a discussion of how applicable relevant and appropriate requirements (ARAR) will be met and set forth a method of documenting that ARARs are met during the remedial action.

Response: Please see response to General Comment #13.

Action: As stated in General Comment #13.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4.0

Page #: 4-1

Line #: 3 to 19

Original Specific Comment #: 72

Comment: The text discusses WACs established for the OSDF. The text should be revised to include the WACs (radiological, chemical, and physical) for the OSDF. The text also refers to other support plans for sampling impacted materials and soil in the OSDF and borrow area footprints. As stated in general comment #13, the text should include a brief summary of those support plans.

Response: A table of the waste acceptance criteria will be added to Section 1.2.1. The response to Comment 13 discusses the summary of the support plans.

Action: As stated.

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Commenting Organization: U.S. EPA
Section #: 5.0 Page #: 5-1
Original Specific Comment #: 73

Commentor: Saric
Line #: 13 to 18

Comment: *The text refers to a forthcoming Post-Closure Care and Inspection Plan for the OSDF. The text should provide a brief discussion of the inspection and monitoring activities that are included in that support plan and any corrective action activities that may be found necessary as a result of inspection or monitoring activities.*

Response: Text will be added to discuss the salient aspects of the post-closure plan.

Action: As stated.

Commenting Organization: U.S. EPA
Section #: 7.1 Page #: 7-1
Original Specific Comment #: 74

Commentor: Saric
Line #: 20

Comment: *The text states that the OSDF construction subcontractor develops specific safe work plans. The text does not state who approves the safe work plans. The text should be revised to specify the procedures for approving safe work plans.*

Response: FERMCO reviews and approves the safe work plans.

Action: Add text to RAWP.

Commenting Organization: U.S. EPA
Section #: 7.2 Page #: 7-2
Original Specific Comment #: 75

Commentor: Saric
Line #: 1

Comment: *The text states that the contingency plan for the OSDF remedial action project is covered by the existing FEMP Emergency Plan. However, the OSDF has not been constructed to date. Therefore, the FEMP Emergency Plan must be revised to include specific emergency procedures related to the remedial action activities at the OSDF.*

Response: The FEMP emergency plan currently covers the type of emergencies that could occur at the FEMP. The emergency plan is reviewed on a regular basis to assure that the plan covers potential emergencies from new or modified facilities.

Action: None at this time.

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OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS
INTERMEDIATE DESIGN PACKAGE
ON-SITE DISPOSAL FACILITY

EDC

GENERAL COMMENTS

Commenting Organization: Ohio EPA

Commentor: ODH

Section #: Line #:

Code: C

Original Comment #: 1

Comment: While conservative modeling predicts very low concentrations of airborne particulate radionuclides offsite to the nearest receptor, this may not be so for the remediation workers. As the on-site remediation workers will incur the greatest risk during placement of impacted materials, are there any planned enhancements to the current occupational radiological programs for required monitoring, action levels, and possible internal uptakes or external exposures? If this information appears in a Project Specific Health & Safety Plan, ODH requests this once available.

Response: As a matter of clarification, the grass vegetation specified in this plan is for revegetation of the borrow area, not the permanent vegetative cover of the OSDF and the vegetation of the OSDF buffer area. DOE is aware of and sensitive to its commitments made to involve the public, including the Fernald Citizens Task Force and the Community Re-use Organization, in the decision making process. DOE will solicit input from the public on this matter, and give serious consideration to their recommendations and input.

Action: As per response.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: Preliminary Design RTC Comment #27 Code: C

Original Comment #: 2

Comment: The Ohio EPA concurs with DOE's response to provide digital copies of the drawings and maps as requested in the Ohio EPA preliminary design package. However, the request to maintain these files as business sensitive is rather vague and may be in conflict with Ohio law regarding public access to the records kept by the State of Ohio. It is not Ohio EPA's intention to disseminate the contents of these files to any third party, but there may exist no legal means whereby Ohio can withhold these documents if there is a bona fide request to view them. Ohio EPA copies these drawings upon receipt to the hard drive of our GIS computer and maintains the submitted files as backups. It is our intention to maintain copies of the various phases of design in order to understand the evolution of the design. Returning the original would inhibit our ability to archive the electronic design files. In

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some cases files are FTPed to Ohio EPA. In these cases there are not storage media to return to DOE. Rather than an exchange of verbal comments, this matter may be more readily resolved in the meeting scheduled for May 28, 1996 at the Fernald site.

Response: As discussed during the 29 May 1996 meeting at Fernald, there is no objection to public access to records or obtaining properly authorized paper copies.

Action: No action is required.

PERMITTING PLAN AND SUBSTANTIVE REQUIREMENTS

Commenting Organization: Ohio EPA *Commentor: OFFO*

Section #: 3.3 *Page #: 3-2* *Line #: 36* *Code: C*

Original Comment #: 3

Comment: Please repeat the referenced schedule here.

Response: Wetlands mitigation strategy for the FEMP is currently planned to be addressed by the Site-Wide Excavation Plan. Because the Operable Unit 5 Remedial Design Work Plan (RDWP) has not yet been approved, the schedule for submittal of the Site-Wide Excavation Plan has not yet been finalized. The next revision of the Operable Unit 5 RDWP will present a submittal date of March 14, 1997 for the Site-Wide Excavation Plan. This date will be added to the OSDF Permitting Plan, but if the date changes in the Operable Unit 5 RDWP, the Permitting Plan will be revised accordingly.

Action: The text will be clarified regarding the documentation and schedule for wetlands mitigation for the FEMP.

BORROW AREA MANAGEMENT AND RESTORATION PLAN

Commenting Organization: Ohio EPA *Commentor: OFFO*

Section #: Appendix B *Page #: Table 5* *Line #:* *Code: C*

Original Comment #: 4

Comment: The stakeholders should be consulted before a final decision is made on types of grasses to be used for the permanent vegetative cover. Recommendations from the Fernald Citizens Task Force and the Community Re-use Organization may dictate the types of vegetation that are needed.

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Response: As a matter of clarification, the grass vegetation specified in this plan is for revegetation of the borrow area, not the permanent vegetative cover of the OSDF and the vegetation of the OSDF buffer area. The DOE is aware of and sensitive to its commitments made to involve the public, including the Fernald Citizens Task Force and the Community Re-use Organization, in the decision making process for the permanent vegetative cover of the OSDF and its buffer area. DOE will solicit input from the public on this latter matter, and give serious consideration to their recommendations and input.

Action: As per response. No revision to this plan.

IMPACTED MATERIAL PLACEMENT PLAN

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: Page #: Line #: NA Code: C

Original Comment #: 5

Comment: The Ohio EPA continues to have serious concerns with the disposal of large blocks of concrete in the OSDF. These concerns may be summarized as follows:

- the possibility that these materials may be reused as aggregate in the construction of remedial facilities such as roads,*
- the scheduling difficulties of meeting the necessary soil to debris ratio and the possible double-handling that would result from stockpiling concrete during "soil-poor" periods,*
- the difficulty of both compacting around the large slabs and verifying that compaction has been successfully achieved, and*
- the existence of proven technology to crush concrete to a soil-like material that can be compacted.*

Response: This comment raises several issues. The first issue is the possibility of reusing the concrete as aggregate in the construction of the remedial facility such as roads. While on the surface this looks feasible, one must consider the expense of removing the reinforcing steel in the concrete. Without removing this steel the use of the concrete as aggregate will not be practical. Second, DOE is pursuing a waste minimization policy at the Fernald site. There is a great likelihood that any equipment used to size reduce the concrete would become contaminated and therefore add to the volume of the debris placed in the OSDF.

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The second bullet suggests scheduling difficulties that may arise during the placement of the concrete. DOE believes that the Subcontractor, when chosen, can schedule its work in such a manner that these scheduling difficulties will be minimized.

The third bullet raises concerns about compacting around the large slabs. The IMPP currently limits the size of concrete and other material to previously agreed to in physical waste acceptance criteria. All references to placement of oversized materials have been removed from the IMPP without first gaining approval.

The fourth bullet is similar to the first in that proven technologies used to size reduce the concrete would potentially add additional volume to the OSDF.

Action: Remove references to placement of oversized material from the IMPP.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #:

Page #:

Line #:

Code: major

Original Comment #: 6

Comment: It has recently come to Ohio EPAs attention that there are some emerging technologies that show promise to chemically destroy asbestos fibers including transite. It is Ohio EPAs expectation that these technologies will be evaluated for the transite from OU3.

Response: DOE has committed to evaluate emerging technologies that may reduce the volume of material disposed in the OSDF. DOE would like to better understand what emerging technologies exist in order to further evaluate them.

Action: FERMCOTechnology Programs to contact OEPA for more information.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 2.2

Page #: 2-1

Line #: 22

Code: C

Original Comment #: 7

Comment: The citation for the Ohio Administrative Code applies to existing sources of air pollution. The correct citation for new sources is OAC 3745-31-05(A)(3) which requires "best available technology" (BAT). OAC 3745 17-12(C)(1) provides a summary of BAT requirements.

Response: The referenced citation given in the Impacted Materials Placement Plan is OAC 3745-17-08, which is the ARAR identified in the OU2 and OU5 RODs as pertinent to the identification of "reasonably available control measures" for the control of visible

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particulate (fugitive dust) emissions to be employed to meet the requirements stated in another of the OU2- and OU5-ROD-determined ARARS, OAC 3745-17-07(B)(4) through (6), for restriction of emission of fugitive dust. These are the ARARs determined in the RODs by USEPA and OEPA for excavation and placement of impacted materials. DOE will follow the ROD-determined ARARs.

The commentor identifies OAC 3745-31-05(A)(3), another ARAR identified in the OU2 and OU5 RODs *but* as pertinent to material processing operations such as crushing. Such material processing operations are outside the scope of this OSDF remedial action project, and specifically outside the scope of this Impacted Materials Placement Plan.

Action: The text in Sections 2.1 Overview and 2.2 Applicable of Relevant and Appropriate Requirements will be revised to better describe ARAR determinations described above.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 4.3 Page #: 4-3 Line #: 32 Code: C

Original Comment #: 8

Comment: Please delete all references to tires in the Impacted Material Placement Plan. Tires are banned from land disposal in Ohio.

Response: DOE agrees with this comment and will remove all references to placing tires in the OSDF.

Action: Remove references to placing tires in the OSDF from the IMPP.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 6.9 Page #: 6-9 Line #: 35 Code: C

Original Comment #: 9

Comment: There is no Figure 6-3.

Response: Figure 6-3 was inadvertently omitted from the intermediate design package submittal.

Action: Figure 6-3 has been included in the prefinal design package submittal.

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Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 7.2, 7.3, 7.4 Page #: 7-2 Line #: NA Code: C
Original Comment #: 10

Comment: *Discuss the implications of requiring that the compaction layer be within ± 2 percent of the optimal moisture content. The moisture specifications for liner materials are 2 per cent wetter than optimal because the working of the liner materials during compaction will tend to dry them somewhat. Why isn't this reasoning applied to the placement of the protective and contouring layers in this section and the placement of select impacted material in section 7.3 and the placement of Category 1 material in section 7.4. In the case of Category 1 material, the moisture content is allowed to be even dryer at ± 4 percent of optimum.*

Response: The compaction moisture content of compacted clay liner and cap material is required to be wetter than optimum because the clay needs to be relatively "wet" when compacted if it is to achieve a hydraulic conductivity of not more than 1×10^{-7} cm/s. If the clay is dry of optimum when compacted, it will not achieve the desired low hydraulic conductivity. In contrast, the goal of compaction of impacted material in the OSDF is not to achieve low hydraulic conductivity (as it is with the compacted clay liner and cap), but rather to achieve adequate soil strength and stiffness so that the OSDF is stable and does not undergo excessive settlement. The specified range of allowable moisture contents (which allows compaction dry of optimum) was selected to achieve adequate strength and stiffness characteristics for the soil placed in the OSDF. In fact, a soil compacted to a given dry density at a moisture content dry of optimum will be stronger and stiffer than the same soil compacted to the given dry density at a moisture content wet of optimum.

Action: No action is required.

SPECIFICATION PACKAGE COMMENTS

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: Spec-General Page #: Line #: NA Code: C
Original Comment #: 11

Comment: *Please include a Table of Contents with this document, listing the title of each section for ease of reference.*

Response: A Table of Contents was prepared for the Specification Package for the Intermediate Design Package but may have been inadvertently omitted from the reviewed copy.

Action: A Table of Contents will be included in each copy of the Specification Package for the Prefinal Design Package.

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Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section #: General Page #: Line #:

Code: C

Original Comment #: 12

Comment: *Some aspects of this design package appear to be less complete than the preliminary design package. Specifically, the civil drawings and the mechanical drawings relating to the LCS, LDS, and the liner and cover designs. The number of civil drawings has significantly decreased. Additionally, many referenced specifications have not been included in the specification package.*

Response: The 60 percent design package did not include all drawings and specifications necessary for the certified for construction (CFC) package. As such, several construction drawings and specifications were omitted based on an impression that the agency did not desire to review the CFCs. These drawings and specifications will be included in the 90 percent design package.

Action: As stated.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section #: Page #: Line #:

Code: C

Original Comment #: 13

Comment: *A number of models are used to predict the OSDF design parameters (HydroCAD, HELP, XSTABL, Shake91, YSLIP_L, Landfill Air Emission Estimation Model and RAECOM). The text needs to include a discussion of the model assumptions and to what extent the site specific data conform to those assumptions. This review will enable the evaluation of the models' applicability to the OSDF design.*

Response: Reference should be made to Sections 1.1 and 1.2 of the design package calculations. Section 1.1 entitled "Design Parameter Summary," provides brief descriptions of the bases for the various parameters used in design. Section 1.2 entitled "Computer Program Validation," provides brief descriptions of the applicability and limitations of the computer programs used in the design.

Action: No action is required.

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Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section #: Page #: Line #: Code: C

Original Comment #: 14

Comment: *The calculation of the volume of soil expected for staging in the borrow area is not included. It is understood that the volume of soils in excess of the Waste Acceptance Criteria (WAC) is to be determined in the near future based on the soil sampling program. However, it is important to note that once the final determination has been made, a re-calculation of the appropriate size of the borrow area may be necessary. The inclusion of the calculation of the estimated area required in the document will be useful reminder and "place holder" until the actual calculation is demonstrated.*

Response: No response necessary based on the 4 June 1996 teleconference between DOE and OEPA.

Action: No action is required.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section #: 02220 Page #: 02220-7 Line #: 32 Code: C

Original Comment #: 15

Comment: *A reference is made to Specification 2210, which is not included in this package. Please include this specification.*

Response: DOE will include this specification in the 90 percent submittal. Also see response to original comment #12.

Action: As stated in response to original comment #12.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section #: 02225 Page #: 02225-9 Line #: 2 Code: C

Original Comment #: 16

Comment: *Reference to repair of desiccation cracking should be Part 3.09 of this section. The reference given is part 3.07 of this section.*

Response: Specification Section 02225 has been revised.

Action: Desiccation cracking is now addressed in Section 3.08 and is properly referenced.

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Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: 02214 Page #: 02714-8 Line #: 13 Code: C
Original Comment #: 17

Comment: A reference is made to Specification 2215, which is not included in this package. Please include this specification.

Response: See response to original comment #12.

Action: As stated in response to original comment # 12.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: 90X-6000-G-00018 Sheet #: G-18 Detail #: Code: C
Original Comment #: 18

Comment: Specification 13010 is referenced on this drawing. Please include Specification 13010 in the specification package.

Response: See response to original comment #12.

Action: As stated in response to original comment # 12.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: 90X-6000-G-00024 Sheet #: G-24, Sect B,C,D Code: C
Original Comment #: 19

Comment: Please make a note explaining the composition of the pipe embedment. Ideally, this material should be a low permeability material, possibly a continuation of the three foot thick compacted clay layer that makes up the bottom layer of the landfill proper. If the gravity pipe was embedded in a compacted clay material, leachate will be contained when the pipe fails.

Response: All leachate transmission piping is double-contained. If the inner pipe fails, leachate is contained in the outer pipe. Pipe bedding is a cohesionless material which can more uniformly surround and support the pipe.

Action: Detail 98 on Drawing M-6 has been added to the Prefinal Design Package showing the material and geometry of the pipe embedment.

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Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 90X-6000-M-00002 Sheet #: M-2 Detail #: Code: C

Original Comment #: 20

Comment: LT 101 through LT 901 in the LDS are shown on this piping and instrumentation diagram. These are not shown on any of the LDS manhole details on Sheets M-4 and M-5. Please include these level transmitters in the details.

Response: The location of the level transmitters in the LDS manholes have been identified on Drawings M-4, M-5, and M-6. A detail of the level transmitters is included on Drawing M-6.

Action: Sheet M-6 has been included in the Prefinal Design Package.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 90X-6000-M-00006 Sheet #: M-5, Sect A,B,C Code: C

Original Comment #: 21

Comment: The manhole embedment fill references Note 6, which references specifications 2215 and 2605. Neither of these specifications are included in the specifications document. Is this material a low permeability material. This would add an element of secondary containment to the manholes.

Response: The manholes constitute secondary containment to leachate transmission piping inside the manholes. The manhole embedment fill is the same as pipe bedding material. The embedment is a cohesionless material which can more uniformly surround and support the manhole.

Action: No action is required.

CALCULATION PACKAGE COMMENTS

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: Executive Summary Page #: 2 Line #: Code: C

Original Comment #: 22

Comment: We agree that the leachate will maintain a degree of saturation in the impacted material, however much of the leachate will drain. This will be a function of the saturation-suction relationship of the impacted material. Since there is a capillary break at the drainage layer in the bottom of the landfill, the pressure will be atmospheric at this point. It is doubtful that a the impacted material will maintain a saturated capillary fringe above this

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capillary break which is 30 feet thick. For most soil types, the capillary fringe is on the order of a foot thick or less. It is probable that the moisture content will be reduced by capillary suction to its residual saturation level (which is usually in the range of 10 to 30% saturation) within five to ten feet of the bottom of the landfill. Without characterization of the impacted material to develop the saturation-suction relationship, it is hard to predict exactly how much leachate will drain. The rate at which this material will drain is also an unknown factor. We believe the "back of the envelope" calculation provided in the original Comment #41 is reasonable and some contingency for this volume of leachate should be made.

Response: For most soils and at most water contents, except near saturation, fine grained soils have higher matric suctions than coarse-grained soils as shown in Figure 1 [adopted from Khire, M.V., "Field Hydrology and Water Balance Modeling of Final Covers for Waste Containment," Ph.D. Dissertation, University of Wisconsin, Madison, 1995]. Therefore, in a capillary barrier where a fine-grained soil layer is underlain by a coarse-grained soil layer, an upward hydraulic gradient exists at the interface of the two layers, except when the fine-grained soil has a high degree of saturation and the coarse-grained soil has a low degree of saturation.

At the OSDF, the impacted material will primarily consist of on-site till classified as a CL in accordance with the Unified Soil Classification System (USCS). The drainage layer of the leachate collection system (LCS) will consist of gravel. It is anticipated that the impacted material will be placed at an initial degree of saturation of 65 to 75 percent as shown in Section 5.2, "Overall Impacted Material Settlement," of the design package calculations. Due to the elevation difference, the total potential (which is the summation of pressure, elevation and velocity potentials) in the till layer will increase with depth. Therefore, leachate in the till will migrate downward until potential equilibrium is reached. This will cause the lower portion of the till layer to have a higher degree of saturation than the upper portion of the till layer.

If the till is compacted at an initial degree of saturation of 75 percent, the top of the till layer may eventually reach 72 percent and the bottom may reach 78 percent. At these saturation degrees, suction in the till may be on the order of 10 to 100 m as shown in Figure 1. [Note that CL curve shown in Figure 1 was measured for a clay which has similar characteristics to the OSDF till material]. For leachate in the till to flow downward into the gravel layer, suction in the gravel should be greater than suction in the till (i.e., greater than 10 to 100 m). However, these suctions may occur in gravel only at extremely dry conditions (i.e., less than 2 percent saturation). Such dry conditions are not anticipated to occur in the gravel for any significant period of time. Therefore, it is

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considered unlikely that the till will drain any significant amount of pore liquid into the gravel drainage layer of the LCS other than that liquid expelled due to consolidation.

Action: No action is required.

Commenting Organization: Ohio EPA

Commentor:

Section #: Sect 1.3, Selected Tech Ref

Page #:

Line #:

Code: C

Original Comment #: 23

Comment: The article by Bonaparte et al provides documentation for the shear strength properties assigned to reinforced and unreinforced GCL's and answers comments on the Preliminary Design Package. The Ohio EPA cautions, however, that the shear strength of reinforced GCL's deteriorates at high shear deformations (corresponding chiefly to breakdown of the reinforcement). Thus the effective shear strength of a reinforced GCL, during the initial short-term construction period, should be evaluated in view of the loads and deformations encountered during that period. So long as the critical deformations for breakdown are not exceeded, the design shear angle of 30 degrees may be safely used.

Response: The only two slope stability analyses for which a reinforced GCL angle of internal friction of 30° was used are for the liner system and final cover system end-of-construction conditions. For both of these conditions, the shear stresses imposed on the GCL are "stress-controlled" and not "strain controlled." For "stress-controlled" loading that does not cause exceedence of the GCLs peak shear strength, internal GCL deformations will be very small. All other slope stability analyses implicitly (and conservatively) assume that the GCL can be subjected to significant internal deformations and thus, GCL angle of internal friction much below 30° should be used to represent the shear strength of a reinforced GCL.

Action: No action is required.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section #: 2.1 Cal Package

Page #: 8 of 15

Line #: Code: C

Original Comment #: 24

Comment: The maximum dry density should be presented in the table on the lower part of this page. For example, the disturbed maximum dry density of depth 5.5 to 10.5 seems to be in excess of the undisturbed dry density.

Response: The requested information will be added to page 8 of 15 of Calculation Package 2.1. Note that the disturbed-material maximum dry density as obtained from a standard Proctor

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compaction test (ASTM D 698) can be smaller or larger than the undisturbed dry density of the material; if the material exists in a very dense state in-situ, the undisturbed dry density can exceed the disturbed-material maximum dry density, and vice versa.

Action: Add the requested information to Calculation Package 2.1, page 8 of 15.

Commenting Organization: Ohio EPA *Commentor:* GeoTrans, Inc.

Section #: 2.2 Cal Package *Page #:* 4 of 16 *Line #:* *Code:* C

Original Comment #: 25

Comment: The calculation of the slope of L6 should be verified. Our review indicates that the slope of L6 shown is not equal to the slope calculated from the measurement of height and width. According to the slope shown in the figure, the ratio between height and width is 1 to 6. However, by calculating the ratio using the reported H5 and W6, the ratio is almost 1 to 5. If this discrepancy affects other calculations, revisions should be performed.

Response: The hand-calculations presented in Section 2.2 were for the purpose of verifying the OSDF capacity calculated using AutoCAD®. Figure 1 is a figure drawn to scale in AutoCAD® and represents an average cross-section between the intercell berm and the drainage corridor of a cell in the OSDF. Figure 2 is an idealization of Figure 1. The 1% slope along the bottom of the cross-section shown in Figure 1 was assumed not to exist in order to simplify the cross-section in Figure 2 into right triangles and rectangles. Although the 1% slope was not used in Figure 2, the correct heights and widths from Figure 1 were used in Figure 2 and in the subsequent calculations. This simplification of the cross-section does not have a significant effect on the capacity check calculation, however, it simplifies the check calculation. It should be noted that the capacity check hand-calculated using the idealized cross-section shown in Figure 2 was within 5% of the capacity calculated using AutoCAD®.

Action: Remove the slope indicators (i.e., 6H:1V) from Figure 2 of page 4 of 16 of Section 2.2 of the Calculation Package.

Commenting Organization: Ohio EPA *Commentor:* GeoTrans, Inc.

Section #: 3.5 Cal Package *Page #:* 1 of 11 *Line #:* *Code:* C

Original Comment #: 26

Comment: The last sentence of this page states that a final cover system with a 5H:1V slope does not meet the minimum acceptable factor of safety requirement. How is this discrepancy resolved.

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Response: The final cover system of the OSDF will be constructed with a maximum slope of 6 horizontal to 1 vertical (6H:1V). The final cover system slope stability calculation was performed for 5H:1V slope to establish the requirement for the 6H:1V slopes.

Action: No action is required.

Commenting Organization: Ohio EPA

Commentor: DERR

Section #: Section 4, Seismic Slope Stability

Page #: Line #: Code: C

Original Comment #: 27

Comment: Original comment # 37 on the Preliminary Design Package raised questions about fault systems in or near Ohio which have caused earthquakes in this century. My revised questions is as follows: Based on the history and intensity of earthquakes emanating from either of the fault systems cited, is there reason to reassess the design accelerations used for slope stability calculations? Could either of these system reasonably produce a more severe acceleration than used for the stability calculations?

Response: The seismic source zones (i.e., Greenville, Illinois, and Reelfoot Rift Complex Subzone B) that are used in the seismic hazard assessment are defined by of the regional fault systems. The fault systems cited in Original Comment No. 37 of the Preliminary Design Package (i.e., the Anna-Champaign Fault of the Fort Wayne Rift System and the West Hickman-Bryan Station Fault near Maysville, Kentucky) are represented in the seismic source zones used in the analysis. The design acceleration and magnitude for the seismic source zones used for the seismic stability calculations represent the most severe conditions, and therefore, it is not necessary to separately consider the cited fault systems.

Action: No action is required.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section #: 5.2 Cal Package

Page #: 1 of 2

Line #:

Code: E

Original Comment #: 28

Comment: The definition of the "z" variable should be included.

Response: DOE agrees with the comment. The variable z was incorrectly identified by the variable y. The calculations do not include a y variable.

Action: Revise the definitions on page 1 of 2 and page 1 of 1 in Section 5.2 of the calculations for the Prefinal Design Package.

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Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 5.3 Cal Package Page #: 5 of 46 Line #: Code: E

Original Comment #: 29

Comment: *The definition of the variable indicated below the equation should be e_p rather than P_p .*

Response: DOE agrees with this comment.

Action: The suggested change to Section 5.3 of the calculation package has been implemented for the Prefinal Design Package.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 7.1 Cal Package Page #: 9 of 30 Line #: Code: C

Original Comment #: 30

Comment: *With regard to the HELP model parameters, it is unclear why the percentage of landfill area where the runoff is possible for Case 1 and 2 is reported to be 0%. Case 1 and 2 include initial and intermediate period of operation, therefore, the area of possible runoff should be more than 0%.*

Response: The percentage of landfill area where runoff is possible was assumed to be 0% for initial and intermediate periods of operation to be conservative. Under this assumption, percolation of rainwater into the waste, and therefore leachate generation rates, will be conservatively overestimated.

Action: No action is required.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 7.2 Cal Package Page #: 6 of 18 Line #: Code: C

Original Comment #: 31

Comment: *On the bottom this page, the values of V_s exceed the allowable flow velocity of 2 ft/sec. Therefore, erosion in the temporary ditches is anticipated and the appropriate erosion control measure(s) will be required.*

Response: The temporary ditches will be located within the limits of the active cells and therefore are completely contained. Based on the calculations performed, water flow velocities in these temporary ditches may exceed 2 ft/s under the 25-year, 24-hour storm event. Therefore, potential for erosion of the ditch surfaces exists and maintenance of the ditches will be

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required under these conditions. Erosion control measures that may be implemented include use of silt fences along the lengths of the ditches as well as spray coating the ditch surfaces with materials that improve erosion resistance. Other measures may be implemented by the contractor as appropriate.

Action: No action is required.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: 9.2 Cal Package Page #: 2 of 2-LDS Line #: Code: C
Original Comment #: 32

Comment: *The LDS drainage corridor in active operation conditions and post-closure conditions have very high safety factors (53,400 and 14,000) for flow capacity. While it is understood that there are construction and logistical problems with designing the drainage corridor (i.e., to equal the safety factors of 3 and 10, the width and height would be too small to construct), there does seem to be some over-design.*

Response: A 6-in. (150-mm) nominal diameter HDPE pipe is specified for the leak detection system drainage corridor to improve the ability to cleanout and maintain the pipe in comparison to the ability inherent in using a smaller diameter pipe. This benefit significantly outweighs the small incremental cost associated with using the specified HDPE pipe in comparison to a smaller diameter pipe (which would still provide adequate flow capacity).

Action: No action is required.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: 9.4 Cal Package Page #: 1 of 1-LDS pipe design Code: C
Original Comment #: 33

Comment: *Our calculation of the flow capacity for the active operation and the post-closure conditions result in safety factors of 4.48×10^6 and 1.50×10^8 respectively. These values are much higher than the required and reported safety factor values of 3 and 10. While it is understood that there are construction and logistical problems with designing the flow capacity (i.e., to equal the safety factors of 3 and 10, the piping would be too small to work with), there does seem to be some over-design of the LDS pipe.*

Response: See the response to Original Comment No. 32.

Action: No action is required.

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Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 10.3 Cal Package Page #: 5 of 34 Line #: Code: C

Original Comment #: 34

Comment: With regard to the LTS temporary lift station and manhole design: the temporary lift station should include equipment with a high level/alarm to inform the system operator with the possibility of over-fill.

Response: The temporary lift station has been eliminated from the pre-final design as the temporary forcemain has been replaced by a temporary gravity line. Note, however, that all manholes for the project, including LCS and LDS manholes will have liquid level sensors and high level alarms.

Action: No action is required.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 14.2 Cal Package Page #: 12 of 19 Line #: Code: C

Original Comment #: 35

Comment: With regard to the potable water supply for the construction administration area design requirements calculation procedure, the water for dust control haul road control is calculated to be 54 GPM rather than 70 GPM.

Response: DOE agrees with this comment.

Action: The value has been updated to reflect the current estimated water demand in the Section 14.2 of the calculations for the Prefinal Design Package.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 14.2 Cal Package Page #: 1 of 9 Line #: Code: C

Original Comment #: 36

Comment: With regard to the potable water supply for the construction administration area design requirements data verification, the K value for 4"/2" reducer should be 0.065 and the K value for 2"/1.5" reducer should be 0.055.

Response: The configuration of the reducer to be used was not known at the time of the calculation, therefore, the more conservative value was used in design.

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Action: The calculation was revised in Section 14.2 of the calculations for the Prefinal Design Package to reflect the more realistic k values for the reducers, however, the final result is unchanged.

Commenting Organization: Ohio EPA *Commentor:* GeoTrans, Inc.

Section #: 14.2 Cal Package *Page #:* 5 of 8 *Line #:* *Code:* C

Original Comment #: 37

Comment: With regard to the potable water supply for the construction administration area: the fire protection primary water supply at the west side of the construction administration area should supply a dynamic head of 20 ft (see page 5 of 19, Potable Water Supply for the Construction Administration Area Design Requirements Calculation Procedure) plus 50 ft of pressure difference between the pipe inlet and outlet. Therefore, the supply must enter the construction administration area at a pressure of at least 70 ft rather than 50 ft. The calculation should be similar to page 2 of 8.

Response: DOE agrees with this comment.

Action: Section 14.2 of the calculations was revised for the Prefinal Design Package.

Commenting Organization: Ohio EPA *Commentor:* GeoTrans, Inc.

Section #: 14.2 Cal Package *Page #:* 6 of 8 *Line #:* *Code:* C

Original Comment #: 38

Comment: With regard to the potable water supply for the construction administration area, the formula used to calculate Re, the unit for V is ft³/s not ft/s.

Response: DOE agrees with this comment.

Action: Section 14.2 of the calculations was revised for the Prefinal Design Package.

Commenting Organization: Ohio EPA *Commentor:* GeoTrans, Inc.

Section #: 14.2 Cal Package *Page #:* 8 of 8 *Line #:* *Code:* C

Original Comment #: 39

Comment: With regard to the potable water supply for the construction administration area: the fire protection primary water supply at the west side of the construction administration area should supply a dynamic head of 45 ft (see page 13 of 19), Potable Water Supply for the Construction Administration Area Design Requirements Calculation Procedure) plus 325

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ft of pressure difference between the pipe inlet and outlet. Therefore, the supply must enter the construction administration area at a pressure of at least 370 ft rather than 325 ft. The calculation should be similar to page 2 of 8.

Response: The anticipated location of service of the utilities has been modified since the original calculations were performed. The decontamination facility and tanker fill stations will be supplied from one location and the construction administration area will be supplied from a different location. The calculations have been modified to reflect the new supply locations. Additionally, the results are presented separately to enable the contractor the maximum flexibility with system construction. It has also been assumed in the calculations that only one demand will occur at a time (i.e., there will not be both a potable water demand and a fire water demand at the construction administration and the decontamination facility demand will be separate from the water tanker fill demand).

Action: Section 14.2 of the calculations have been revised for the Prefinal Design Package.

CONSTRUCTION QUALITY ASSURANCE PLAN

Commenting Organization: Ohio EPA *Commentor:* GeoTrans, Inc.

Section #: 2.2 *Page #:* 2-1 *Line #:* 12 *Code:* C

Original Comment #: 40

Comment: *The ARAR criteria should be cross-referenced to the relevant specifications sections, as appropriate. The implication is that the CQA requires reference to ARARs during construction, at which time the specifications and the CQA document should have been written to be compliant.*

Response: Both the CQA Plan and the specifications are written to be compliant with the ARARs. The purpose of stating ARAR criteria in Section 3 to provide the source in the OAC for the specific CQA requirements.

Action: The CQA Plan text for the Prefinal Design Package has been revised in appropriate sections to cross reference the relevant specification sections.

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Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 2.2.1.1 Page #: 2-2 Line #: 13 Code: C

Original Comment #: 41

Comment: *The requirements for the compacted clay liner may not be consistent with the specifications, which should therefore be referenced. For example, the ARARs do not specify several geotechnical index parameters that are requirements elsewhere.*

Response: The compacted clay liner and cap specifications are intended to meet the minimum requirements of the ARARs. The clay liner and cap specifications also include geotechnical index parameters which are intended to assure quality and consistency.

Action: The CQA Plan for the Prefinal Design Package has been revised to include reference to the specifications, as appropriate.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 2.2.1.1 Page #: 2-2 Line #: 26 Code: C

Original Comment #: 42

Comment: *The status of the test fill conclusions and their incorporation into the present document is left unclear*

Response: The test pad program is currently underway. The test pad program began in mid-May 1996 and is scheduled to complete in mid-July 1996 at this time.

Action: Results from the test pad program will be incorporated in the CQA Plan and the specifications upon completion of the program.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 2.2.1.1 Page #: 2-3 Line #: 3 Code: C

Original Comment #: 43

Comment: *The incorporation of the results from the test fill, specifying construction equipment and procedures, is needed for the present document.*

Response: See response for Original Comment #42.

Action: No action required.

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Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 2.2.1.2 Page #: 2-3 Line #: 19 Code: C

Original Comment #: 44

Comment: *The details presented for testing would seem more appropriate in other sections of the document. However, the specifications for moisture/density should be based on a three-point Proctor line-of-optimums approach.*

Response: Details of the testing outlined in the ARARs are summarized in this section of the CQA Plan for completeness. The minimum testing frequencies and acceptance criteria for liner and cap system components are further summarized in the tables presented in Sections 7 and 10 of the CQA Plan. In addition, the compliance of moisture/density field test results will be based on the laboratory determination of Proctor maximum dry density and optimum moisture content.

Action: No action is required.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 2.2.1.3 Page #: 2-5 Line #: 22 Code: C

Original Comment #: 45

Comment: *The geomembrane is placed on a GCL, not directly on the compacted clay liner.*

Response: DOE agrees with this comment.

Action: The text of the CQA Plan has been revised for the Prefinal Design Package to include the correction needed.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 2.2.3.7 Page #: 2-10 Line #: 1 Code: C

Original Comment #: 46

Comment: *This paragraph is confusing; it states that the specifications for clay thickness are either 1.5 feet or 2 feet, depending on the ARAR or the functional requirements of the design. This paragraph should simply state the most conservative specification, and then indicate that this meets or exceeds the ARAR. The same comment applies to the hydraulic conductivity.*

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Response: The purpose of this paragraph is to show that the functional requirements for the composite cap thickness and hydraulic conductivity exceeds the ARAR.

Action: No action required.

Commenting Organization: Ohio EPA *Commentor: GeoTrans, Inc.*

Section #: 4.1 *Page #: 4-1* *Line #: 15* *Code: C*

Original Comment #: 47

Comment: The CCM is an individual, supported by a staff, rather than a group. His/her qualification requirements clearly indicate this assumption.

Response: DOE agrees with this comment. Please note all references to the CCM will be replaced with the Construction Manager (CM).

Action: Remove reference to a group and replace with staff.

Commenting Organization: Ohio EPA *Commentor: GeoTrans, Inc.*

Section #: 4.1 *Page #: 4-2* *Line #: Figure 4-1* *Code: C*

Original Comment #: 48

Comment: The role of the Engineer (or lead design engineer) and the construction engineer is undefined. The resident engineer's interpretation of the plans and specifications in the field should be confirmed with the Engineer. Secondly, the functional role of the contract administrator dictates that he report directly to the contracts manager.

Response: DOE will provide a clearer organizational chart. The proposed organizational chart is attached for information. The proposed organizational responsibilities of the Resident Engineer, the Construction Quality Control Consultant, and the CCM are as follows: First, the intent is to change the CCM to the Construction Manager (CM). The CM will be the FERMCO on-site representative responsible for directing all aspects of the field work. These include ensuring safe working conditions, assuring compliance with contract drawings and specifications, and support plans, directing the subcontractor(s) work, directing approved change orders. The Resident Engineer's responsibilities are detailed in Section 4.2.3 of the CQA Plan. The Resident Engineer will not have authority to modify any contract documents without the approval of the CM. The CQC Consultant will provide construction quality control services for the OSDF project. The CQC Consultant will bring to the attention of the CM all non-comformances. If these non-comformances are not corrected within a reasonable period of time, the CQC Consultant will report the non-comformances to FERMCO Quality Assurance. FERMCO Quality Assurance will

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have stop work authority if the non-conformances are not properly addressed. The CQC Consultant will not have the authority to modify any contract documents without the approval of the CM.

Action: Develop a new organizational chart.

Commenting Organization: Ohio EPA *Commentor: GeoTrans, Inc.*

Section #: 4.4.3 *Page #: 4-5* *Line #: 27* *Code: C*

Original Comment #: 49

Comment: The Subcontractor's field representatives' line of communication should flow through the Resident Engineer, whose role is to specifically recognize and address, in conjunction with his organization, any discrepancies between plans and specifications, or CQA documents.

Response: The Subcontractor's field representative line of communication will be through his/her management to the Construction Manager. If there are discrepancies between the plans and specification, the CM will consult with the Resident Engineer to obtain his/her interpretation of the proposed discrepancies.

Action: Provide new organizational chart.

Commenting Organization: Ohio EPA *Commentor: GeoTrans, Inc.*

Section #: 4.5.3 *Page #: 4-9* *Line #: 1* *Code: C*

Original Comment #: 50

Comment: The CQC consultant is clearly responsible for other testing, besides on-site soils laboratory tests. For consistency, please expand on other testing, both on- and off-site.

Response: DOE agrees with this comment.

Action: The text of the CQA Plan regarding the CQC Consultants responsibilities has been expanded for the Prefinal Design Package to include a detailed description of both on- and off-site testing requirements.

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Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section #: 5.1.2

Page #: 5-3

Line #: 5

Code: C

Original Comment #: 51

Comment: *Example forms would be much more useful to this section to support/replace the narrative.*

Response: DOE agrees that sample forms would be useful to support the narrative.

Action: The text in this section of the CQA Plan has been revised for clarity. Examples of QA monitoring logs and test data sheets used by the CQC Consultant are provided in an appendix of the CQA Plan for the Prefinal Design Package.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section #: 6.3.1

Page #: 6-2

Line #: 11

Code: C

Original Comment #: 52

Comment: *The required survey accuracy seems unnecessarily low (within 1 foot horizontal) for present technology. Suggest that horizontal and vertical tolerances be consistent with available accuracy and precision.*

Response: The passage (i.e., within 1 foot horizontal) was incompletely cited. It actually reads "*shall be one foot horizontal to 2,500 feet horizontal.*" Note that this survey tolerance is in accordance with OEPA regulations.

Action: No action is required.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section #: 7.3

Page #: 7-2

Line #: 23

Code: C

Original Comment #: 53

Comment: *The subcontractor's equipment and methods of construction should be consistent with appropriate specifications (which were not be referenced). Means and methods, unless indicated in the specifications, are typically left up to the contractor. Why is there a need for a "letter" to describe contract requirements that are part of the engineering design for subgrade preparation? This requirement, if necessary, should be spelled out as a submittal requirement in the specifications. Secondly, similar requirements are not discussed in the contract for soil liner components.*

Response: The intent of the "letter" is to require the Subcontractor to document his intended methods and procedures that are not otherwise given in the specifications. It is agreed that the submittal should be made a part of the specifications.

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Action: The CQA Plan has been revised for the Prefinal Design Package to eliminate the Subcontractor's requirement to provide a letter regarding earthwork equipment and construction methods. A submittal requirement will be included in the appropriate specification.

Commenting Organization: Ohio EPA *Commentor: GeoTrans, Inc.*

Section #: 7.3 *Page #: 7-3* *Line #: 1* *Code: C*

Original Comment #: 54

Comment: The reference to a specifications section to cover dewatering is appropriate, but inconsistent with the lack of reference to specifications elsewhere.

Response: DOE agrees with this comment.

Action: In an effort to assure document consistency, the CQA Plan has been edited for the Prefinal Design Package to remove text which restates portions of the specifications. In these areas, references to the appropriate specifications have been incorporated into the text for clarity.

Commenting Organization: Ohio EPA *Commentor: GeoTrans, Inc.*

Section #: 7.5 *Page #: 7-5* *Line #: 20* *Code: C*

Original Comment #: 55

Comment: This section should also address soil liner conditioning prior to placement, including general observations, e.g., clod size, that should be made by the CQC Consultant.

Response: DOE agrees with this comment.

Action: The text of this section has been expanded for the Prefinal Design Package to include monitoring of the Subcontractor's soil liner conditioning procedures by the CQC Consultant.

Commenting Organization: Ohio EPA *Commentor: GeoTrans, Inc.*

Section #: 7.8 *Page #: 7-9* *Line #: 17* *Code: C*

Original Comment #: 56

Comment: The qualification, "unless otherwise noted in the project specifications," suggests that a reference to the appropriate specifications be made, to avoid a conflict.

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Response: DOE agrees with this comment.

Action: The CQA Plan has been edited for the Prefinal Design Package to remove redundancy with the specifications. Reference to Section 02225 of the specification regarding repair of perforations in the compacted clay liner and cap has been added.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 8.3.3 Page #: 8-5 Line #: 4 Code: C

Original Comment #: 57

Comment: The reference to any submittal should refer to the specifications section which covers the subcontractor's schedule of submittal for all materials and equipment. This submittal schedule should reference the specification governing the performance of a particular component.

Response: DOE agrees with this comment.

Action: The CQA Plan has been edited for the Prefinal Design Package to remove redundancy with the specifications. Reference to Section 02771 of the specification regarding submittal of Manufacturer's quality control certifications has been added.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section #: 8.4 Page #: 8-6 Line #: 23 Code: C

Original Comment #: 58

Comment: This section on labeling should be addressed in Section 8.3.3 along with the QC certification. Presumably, all labeled information will match the roll numbers, etc. identified on the QC certifications.

Response: The labeling of various geosynthetics may differ widely between manufacturers. This section of the CQA Plan was intended to provide guidance to the CQC Consultant for verification of the minimum labeling requirements. Furthermore, it should not be presumed that all labeled information will match the information on the QC Certification. Therefore, verification of the labeled information is recommended.

Action: No action is required.

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Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: 8.7 Page #: 8-9 Line #: 30 Code: C
Original Comment #: 59

Comment: *The process for verification that lines and grades have been achieved for the subgrade should be described in greater detail. This important QC function, the survey, is a responsibility of the subcontractor. Unless the CQC team is provided with a thoroughly documented report, with certification, or other contractor-independent mechanism, there will be no assurance that line and grade accuracy has been attained.*

Response: DOE agrees with this comment.

Action: Sections 6 and 8 of the CQA Plan have been revised for the Prefinal Design Package to indicate the Subcontractor's survey responsibilities are found in Section 02100 of the specifications and to provide more detail regarding the as-built survey verification process by the CQC Consultant.

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: 8.13.1 Page #: 8-35 Line #: 20 Code: C
Original Comment #: 60

Comment: *The initial lift thickness must be consistent with compaction requirements.*

Response: DOE agrees with this comment. The thicknesses noted are intended to be total thicknesses and compacted thicknesses where appropriate.

Action: This Subcontractor requirement has been clarified in Section 02771 of the specifications for the Prefinal Design Package.

AIR MONITORING PLAN

Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Page #: N/A Line #: N/A Code: C
Original Comment #: 61

Comment: *The introduction of this plan states that the air monitoring conducted by both the environmental group and the occupational group, will be used to verify the effectiveness of administrative and engineering control techniques. The Occupational Air Monitoring program is not mentioned again in the plan. How will the Occupational Air Monitoring program be used verify the effectiveness of the proposed control techniques?*

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Response: Occupational air monitoring is conducted to gather information which is used to assess (1) whether an appropriate level of personal protective equipment is being used, and (2) whether limits on occupational exposure are being met. It is important to note that occupational exposure limits are different from environmental exposure limits in two important ways: (1) point of compliance/exposure is different, and (2) regulatory thresholds are different. Nevertheless, the information gathered from both can and need to be used to assess whether the administrative and engineering controls are effective in maintaining emissions and hence exposures below the respective regulatory thresholds.

Action: The plan has been modified to discuss how information from the occupational air monitoring program will be used to supplement the information from the environmental air monitoring program.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: General Page #: N/A Line #: N/A Code: C

Original Comment #: 62

Comment: Will the WAC for the OSDF include radium? Radium bearing wastes generate radon and therefore, radon should be included as a radionuclide of concern. Radon is not mentioned in this air monitoring plan.

Response: The WACs for the OSDF consist of two general categories of criteria: (1) radiological and chemical criteria, and (2) physical criteria. The first category, radiological and chemical criteria developed during the FSs, are focused on long-term protection of the Great Miami Aquifer underlying and downgradient of the OSDF, and were determined by the Records of Decision (RODs) of the operable units (OUs) which have selected on-site disposal as a component of their selected remedial actions (i.e., OUs 2, 3 and 5). The second category, physical criteria, broadly stated, are those criteria which are focused on protection of the containment system's liner, cover, and cap. As part of the balanced approach remediation strategy for the FEMP site, the radium-rich materials from Silos 1 through 3 in Operable Unit 4 — not only the silo contents but also the scabbled concrete from the silos — were determined by the OU4 ROD to be dispositioned off-site. As the OU2 ROD deals only with remediation wastes from OU2, and as radium was not a constituent of concern for OU2, the OU2 ROD did not establish a soils or soil-like materials radiological/chemical WAC for radium or its isotopes. The OU5 ROD, because of the nature of OU5, deals with soils from other OUs including OU4. The OU5 FS (Sections 4.1.3 and F.5.0) and ROD did not establish a soils or soil-like materials radiological/chemical WAC for radium or its isotopes. The OU4 ROD indicates that the balance of debris from the OU4 silos will be dispositioned in accordance with the selected remedial alternative under the OU3 ROD for final remedial action. The OU3 FS and ROD

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have determined waste acceptance criteria for debris, and that technetium-99 is the only constituent subject to a debris radiological/chemical WAC.

Although no WAC exists for radium, ARARs exists for radon emissions from DOE facilities. Those ARARs are indicated in the revised Section 2.2 of this Air Monitoring Plan. Monitoring for radon has been addressed in the revised Air Monitoring Plan.

Action: As per response.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: General Page #:

Line #: Code: C

Original Comment #: 63

Comment: This Air Monitoring Plan does not contain any significant changes from the existing Environmental Air Monitoring program. What efforts will be employed to ensure timely reporting of analytical results? Annual reporting will not be sufficient to verify the effectiveness of administrative and engineering controls.

Response: Section 7 (now 8) of the Air Monitoring Plan addresses how data will be interpreted and acted upon, especially in terms of effectiveness of engineering and administrative controls, and prompt modification of practices. Section 7 (now 8) also addresses that results of the OSDF air monitoring program will be made available in a timely manner to the public, USEPA, and OEPA. Mechanisms and frequency for presentation/reporting to the public are under discussion between DOE and representative members of the public. Similarly, mechanisms and frequency for reporting to USEPA and OEPA are the subject of ongoing discussion between DOE and USEPA and OEPA; preliminary indications are that they are likely to be addressed in a site-wide manner as part of the reporting done under the Integrated Environmental Monitoring Plan. It is anticipated that the IEMP will establish the nature and frequency of reporting of monitoring data that the individual projects will then conform to and report through.

Action: No further action at this time in this plan.

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Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 1.2

Page #: 1-3

Line #: 12-17

Code: C

Original Comment #: 64

Comment: *These lines indicate that this plan will address, as a minimum, the collection of air particulate data in real-time, as appropriate. This plan does not address real-time monitoring or its appropriateness. A statement should be made addressing real-time monitoring.*

Response: The plan as originally drafted was intended to illustrate the following fundamentals:

- (1) the nature of the potential emissions are airborne particulate emissions; and
- (2) the regulations prescribe mechanisms for control of visible particulate emissions, and also prescribe visual evaluation of visible particulate emissions as the assessment mechanism; and
- (3) without accounting for the control mechanisms indicated above, the predicted levels of potential concentrations, risks, and doses are significantly lower than regulatory compliance thresholds; and
- (4) the established regulatory exposure thresholds have a point of exposure/point of compliance defined as public exposure; and
- (5) the established regulatory exposure thresholds' compliance bases are defined in terms of a one year exposure period; and
- (6) annual demonstration of NESHAP Subpart H compliance with the established regulatory exposure thresholds is prescribed by the regulations via modelling on a site-wide basis.

The plan has been revised to better present those and other fundamentals, and to better address the technical approach for formulating the air monitoring program for the OSDF project activities. That revision addresses the concerns expressed in this comment along with other concerns raised by the U.S. EPA and OEPA in other comments.

Action: As per response.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 1.3

Page #: 1-3

Line #: N/A

Code: C

Original Comment #: 65

Comment: *The scope of this plan should address the potential impacts to the public and the environment and how these potential impacts will be identified and measured. These impacts should include, as a minimum, radionuclide emissions (including radon), fugitive dusts, and data reporting/frequency.*

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Response: The discussions presented within Sections 1.3 and 1.4 have been revised to better emphasize that the scope of the AMP includes identification of potential impacts to the public health via the air pathway. With regard to the issue of data reporting and frequency, see the response to Original Comment #63.

Action: As per response.

Commenting Organization: Ohio EPA *Commentor: OFFO*

Section #: 2 *Page #: N/A* *Line #: N/A* *Code: C*

Original Comment #: 66

Comment: A table identifying each of the ARARs and how compliance will be achieved should be included in this section or in an appendix.

Response: DOE believes that the objective of the Permitting Plan, another of the OSDF support plans, is to identify the pertinent ARARs and which document(s) address each requirement. It is DOE's objective that individual support plans be developed in such a manner as to address the ARARs pertaining to the scope of the individual support plan. The listing of ARARs presented in Section 2, and the Air Monitoring Plan itself, have been reformatted in an effort to make more apparent how compliance with the pertinent requirements will be achieved.

Action: As per response.

Commenting Organization: Ohio EPA *Commentor: OFFO*

Section #: 2.2 *Page #: 2-2* *Line #: 18-25* *Code: C*

Original Comment #: 67

Comment: The functional requirement of the air monitoring plan is to ensure that emissions to the public and the environment are within compliance guidelines. This should include monitoring methods that will demonstrate compliance. This may include the existing environmental air monitoring plan.

Response: The text within Section 2.2 (now 2.3) Functional Requirements has been revised as suggested.

Action: As per response.

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Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3 Page #: N/A Line #: N/A Code: C

Original Comment #: 68

Comment: *The risk from radon should be included in this section, as well as a section that describes the accuracy of modeling to actually measured air concentrations. Include a section identifying historical values, and what these values may increase to during OSDF activities.*

Response: As indicated in the text, the discussions presented in Section 3 and throughout the OSDF Air Monitoring Plan relative to risk assessment are all excerpted from the OU5 FS short term risk assessment. Section G.3.1 of Appendix G of the OU5 FS addresses selection of constituents of concern, while the final list of COCs selected for evaluation in the short-term risk assessment is presented in the discussion on exposure point concentrations presented in Section G.3.2.1 of Appendix G of the OU5 FS. Soil concentrations were used in the short-term risk assessment to develop estimates of exposure point concentrations in air. That assessment did not address risk from radon, as radon was not among its list of constituents of concern (COCs) in soil. As the short-term risk assessment did not address risks from radon, it would be misleading to discuss them herein. However, to address the concern of risk from radon in the air pathway, the text has been revised to include a component to address monitoring of radon in the ambient air.

A discussion of historical values would be quite lengthy, because it would essentially need to present a discussion on a monitoring-point by monitoring-point basis. Such a comparison and discussion is better addressed at the time actual monitoring data during OSDF active remediation activities is in hand. That is the intent of the OSDF Air Monitoring Plan — to compare data gathered during OSDF active remediation activities against data from baseline conditions (prior to OSDF active remediation activities) and also against predicted concentrations — as presented in the Baseline Monitoring section (Section 5.2) and Data Interpretation and Response section (formerly Section 7, now Section 6).

With regard to the issue of accuracy of modeling to actually measured air concentrations, the Appendix G of the OU5 FS presents a discussion of uncertainties, in which accuracy of predictive models is addressed. A comparison and discussion of actual values to predicted values is better addressed at the time actual monitoring data during OSDF active remediation activities is in hand. As stated above, that is the intent of the OSDF Air Monitoring Plan — to compare data gathered during OSDF active remediation activities against data from baseline conditions (prior to OSDF active remediation activities) and also against predicted concentrations — as presented in the Baseline Monitoring section (Section 5.2) and Data Interpretation and Response section (formerly Section 7, now Section 6).

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Action: The plan has been revised to include a component to address monitoring of radon in the ambient air. The discussions on data interpretation and response have been revised to better present their intent relative to comparison of actual monitoring data during active remediation activities against predicted values and baseline values prior to OSDF active remediation activities.

Commenting Organization: Ohio EPA *Commentor: OFFO*

Section #: 3.3 *Page #: N/A* *Line #: N/A* *Code: C*

Original Comment #: 69

Comment: *The technical basis for this document is NOT a set of limits set by the EPA and DOE. The technical basis is how monitoring will be conducted to demonstrate compliance with these guidelines. It will also be useful to show how actually measured concentrations will be compared against predicted values.*

Response: The subject text has been revised to clarify intent. The revision addresses demonstration of compliance with regulatory guidelines, via a combination of implementation of reasonably available control measures, monitoring, and modeling, in accordance with the respective regulatory drivers. The revision also addresses comparison of measured concentration against predicted concentrations.

Action: As per response.

Commenting Organization: Ohio EPA *Commentor: ODH*

Section #: 3.3.4 *Page #:* *Line #:* *Code: C*

Original Comment #: 70

Comment: *In Section 3.4.3 of the Air Monitoring Plan, target radionuclide particulates are listed for air monitoring. In Table 6-1, a minimal analysis regimen is presented. Upon comparison, there are differences in the plutonium and neptunium isotopes suggested. Which list of parameters is correct?*

Response: This comment, and a similar comment from USEPA (Original Specific Comment # 21), have prompted a re-evaluation of the information presented in the former Tables 3-1 and 6-1. Table 3-1 (now Table 3-2) has been revised to better illustrate: (a) descending rank order of the radionuclides, based upon predicted airborne concentrations, now presented in column #3b of the table; (b) descending rank order of the radionuclides, based upon ratios of predicted airborne concentration to Derived Concentration Guideline (DCG), now presented in column # 5b, and the basis for resequencing the presentation order in the table; (c) percentage contribution of each radionuclide to the total dose, now presented in

Table 3-2
COMPARISON OF PREDICTED AIRBORNE RADIONUCLIDE
CONCENTRATIONS TO THE DERIVED CONCENTRATION GUIDELINES

#	<u>1</u> Alpha- betic Order	<u>2</u> Radionuclide	<u>3a</u> Predicted Concentration ⁽¹⁾ (pCi/m ³)	<u>3b</u> Rank Order	<u>3c</u> Percent of Total (%)	<u>3d</u> Cumulative Percent of Total (%)	<u>4</u> DCG ⁽²⁾ (pCi/m ³) ⁽³⁾	<u>5a</u> Predicted Concentration to DCG Ratio	<u>5b</u> Rank Order	<u>5c</u> Percent of Total (%)	<u>5d</u> Cumulative Percent of Total (%)
1	10	Thorium-230	1.3 x 10 ⁻⁴	1	42.60	42.60	4.0 x 10 ⁻²	3.2 x 10 ⁻³	1	58.04	58.04
2	16	Uranium-238	1.3 x 10 ⁻⁴	2	42.60	85.20	1.0 x 10 ⁻¹	1.3 x 10 ⁻³	2	23.22	81.26
3	11	Thorium-232	6.6 x 10 ⁻⁶	5	2.16	87.36	7.0 x 10 ⁻³	9.4 x 10 ⁻⁴	3	16.84	98.10
4	5	Radium-226	2.3 x 10 ⁻⁵	3	7.54	94.90	1.0 x 10 ⁰	2.3 x 10 ⁻⁵	4	0.41	98.51
5	2	Neptunium-237	3.6 x 10 ⁻⁷	12	0.12	95.02	2.0 x 10 ⁻²	1.8 x 10 ⁻⁵	5	0.32	98.83
6	9	Thorium-228	7.1 x 10 ⁻⁷	10	0.23	95.25	4.0 x 10 ⁻²	1.8 x 10 ⁻⁵	6	0.32	99.15
7	4	Plutonium-239/240	3.3 x 10 ⁻⁷	13	0.11	95.36	2.0 x 10 ⁻²	1.7 x 10 ⁻⁵	7	0.29	99.44
8	15	Uranium-236	1.1 x 10 ⁻⁶	7	0.36	95.72	1.0 x 10 ⁻¹	1.1 x 10 ⁻⁵	8	0.20	99.64
9	3	Plutonium-238	3.1 x 10 ⁻⁷	14	0.10	95.82	3.0 x 10 ⁻²	1.0 x 10 ⁻⁵	9	0.18	99.83
10	14	Uranium-235/236	9.4 x 10 ⁻⁷	9	0.31	96.13	1.0 x 10 ⁻¹	9.4 x 10 ⁻⁶	10	0.17	99.99
11	6	Radium-228	5.3 x 10 ⁻⁷	11	0.17	96.30	3.0 x 10 ⁰	1.8 x 10 ⁻⁷	11	0.00	100.00
12	7	Strontium-90	9.8 x 10 ⁻⁷	8	0.32	96.63	9.0 x 10 ⁰	1.1 x 10 ⁻⁷	12	0.00	100.00
13	13	Uranium-234	7.2 x 10 ⁻⁹	16	0.00	96.63	9.0 x 10 ⁻²	8.0 x 10 ⁻⁸	13	0.00	100.00
14	12	Thorium-234	7.9 x 10 ⁻⁶	4	2.59	99.22	5.0 x 10 ²	1.6 x 10 ⁻⁸	14	0.00	100.00
15	8	Technetium-99	2.2 x 10 ⁻⁶	6	0.72	99.94	2.0 x 10 ³	1.1 x 10 ⁻⁹	15	0.00	100.00
16	1	Cesium-137	1.9 x 10 ⁻⁷	15	0.06	100.00	4.0 x 10 ²	4.8 x 10 ⁻¹⁰	16	0.00	100.00
TOTAL:			3.1 x 10 ⁻⁴	=	0.00031		TOTAL:	5.6 x 10 ⁻³	=	0.0056	

NOTES:(1) Source: Table G.I-23: Exposure Air Concentrations in the Vicinity of the Hypothetical Near-Property Public Receptor; Short-Term Risk Assessment; *Feasibility Study Report for Operable Unit 5* [DOE, 1995c].

(2) Source: Derived Concentration Guidelines (DCGs) for Concentrations of Radionuclides in Air Emissions; Radiation Protection of the Public and the Environment, DOE Order 5400.5.

(3) DCG concentrations in DOE Order 5400.5 have been converted to pCi/m³. Source: Tables 5-4 and 5-5: Measured Radionuclides at AMS 9/9A and AMS 8, *Fernald Site Environmental Monitoring Plan* [FERMCO, 1995a].

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column # 5c; and (d) cumulative percentage contribution of each radionuclide to the total dose, now presented in column # 5d.

Two radionuclide isotopes — Plutonium-239-240 (entry # 7) and Thorium-234 (entry # 14) [not Neptunium as suggested in OEPA Original Comment #70] — are presented among the 16 in Table 3-2 with predicted airborne concentrations, but are omitted from Table 6-1 (now 7-1) which illustrates the minimum airborne particulate radionuclide analysis regimen. From the new information presented in Table 3-2 (included herein), it is apparent that for the first of these, Plutonium-239/240, rank order #7 per (b) above, contributes only 0.30 percent of the total predicted dose. Further, for the second isotope, Thorium-234, rank order #14 per (b) above, contributes so little to the predicted dose that its percentage contribution does not register to two decimals places when expressed as a percent. From an analysis of the cumulative percent contribution to total predicted dose presented in column #5d, the first 6 rank ordered isotopes, all of which are included in the minimum airborne particulate radionuclide analysis regimen presented in Table 7-1, account for 99.15 percent of the total predicted dose. Note that Table 7-1 presents the analysis regimen which is being and has been used by the site-wide environmental air monitoring program. For these reasons, addition of the two isotopes discussed in this comment would add little valuable information. Therefore, DOE sees no compelling reason to change the airborne particulate radionuclide analysis regimen presented in Table 7-1.

Action: Table 3-1 has been revised and now appears as Table 3-2. No changes to the airborne particulate radionuclide analysis regimen presented in Table 6-1 (now 7-1). The text in Section 7 related to Table 7-1 will be revised to discuss the reasons for not including the analytes under discussion in this comment.

Commenting Organization: Ohio EPA

Commentor: ODH

Section #: *Page #:* *Line #:* *Code:* C

Original Comment #: 71

Comment: *What are the contingencies for continuous operation of the air monitors if periods of high dust load or power outages occur?*

Response: The AMSs identified in this plan are part of the site-wide air monitoring network. As discussed previously in response to Original Comment #64, the airborne particulate radionuclide regulatory exposure thresholds are established with a one-year time period as the period of compliance evaluation. Furthermore, as is discussed in the FEMP Environmental Monitoring Plan which OEPA is familiar with, and as is anticipated to be discussed in the Integrated Environmental Monitoring Plan (IEMP), successor to the EMP, NESHAP Subpart H public dose compliance demonstration is heavily dependent on

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modeling, which by its nature is tolerant of short-term gaps in information such as would occur in the non-continuous operational situations alluded to in the comment. As these AMSs are part of the site-wide network, this issue is best addressed in the IEMP which governs that network.

Action: This comment has been forwarded to the group responsible for development of the IEMP so that they can address it in that plan.

Commenting Organization: Ohio EPA *Commentor: ODH*
Section #: Air Monitoring Plan *Page #:* *Line #: Code: C*
Original Comment #: 72

Comment: There may be heightened apprehension by stakeholders of radiological exposures upon initiation of excavation/placement activities. It may be prudent to offer the option of more frequent sample collections either initially or during periods of increased site activity to enhance public confidence in the efficacy of the air monitoring program.

Response: DOE is aware of and sensitive to this stakeholder apprehension. DOE believes that one of the keys to addressing stakeholder apprehension is to increase their understanding of the potential emissions, the measures that will be used to control potential emissions, the fundamentals of monitoring, and the technologies currently available for monitoring. DOE also believes another key in addressing stakeholder apprehensions is that the timeliness of reporting of monitoring data needs to be more frequent than the current annual report. DOE intends to include air monitoring and reporting on the agenda of issues to address with both the Fernald Citizens Task Force (either as a whole or with its Environmental Monitoring Subcommittee, or with both) and the public.

The issue of more frequent sample collections, either initially or during periods of increased site activity, is a potential approach still under consideration. Technical considerations, however, should not be lost in the desire to address stakeholder apprehensions. The available analytical techniques for measurement of airborne particulates rely on aggregation of particle mass over time, until such time as adequate mass is projected to be available in order to produce a measurable and quantifiable response under the analytical method. More frequent sample collections decrease the particle mass aggregated. The desire for more information, and more frequent information, needs to be balanced by what is achievable via the analytical methods available, and proven to be both effective and reliable. This last point is especially important, since methods which show promise in a laboratory bench trial may not stand up in the field.

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Action: DOE will discuss air monitoring and reporting with stakeholders at upcoming opportunities, and further refine the air monitoring program and reporting of results as appropriate. DOE suggests that OEPA and USEPA consider either disconnecting the decision on approval/disapproval of this OSDF Air Monitoring Plan from the decision on approval of the design package such that this issue can be appropriately worked through with stakeholders, or allowing subsequent modification of the OSDF Air Monitoring Plan on this issue. This approach also allows the OSDF air monitoring program to be reviewed in parallel with the FEMP site-wide Integrated Environmental Monitoring Plan. Current indications are that the OSDF air monitoring program is to be implemented directly by FERMCO, not part of the larger OSDF package that needs to go out for bid, so that these alternatives are implementable without delaying the larger OSDF package, and without impacting the ability to implement the OSDF air monitoring program in the time frame needed.

BORROW AREA MANAGEMENT AND RESTORATION PLAN

Commenting Organization: Ohio EPA *Commentor:* OFFO

Section #: 4.6 *Page #:* 4-3 *Line #:* 20 *Code:* C

Original Comment #: 73

Comment: Please explain the rationale for using temporary seeding, vs. covering with a tarp. It seems that by the time the seed takes hold, erosion of the topsoil stockpile could have easily already occurred.

Response: Seeding was chosen because the topsoil stockpile may lie undisturbed for a year or more. A vegetated surface requires less maintenance than a tarp. The intent is that the Subcontractor shall implement erosion control measures.

Action: The text of the BAMR Plan will be revised for the Prefinal Design Package to allow the Subcontractor the option of tarping the stockpiles if the stockpile size and expected life is appropriate.

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GROUNDWATER MONITORING PLAN*Commenting Organization: Ohio EPA**Commentor: OFFO**Section #: Page #: Line #: Code: C**Original Comment #: 74**Comment: The Ohio EPA will not approve the final OSDF design unless it contains an approvable groundwater monitoring plan.*

Response: DOE intends to present a draft groundwater monitoring plan as part of the 90 percent (prefinal) design submittal. This plan will commit to monitoring the Great Miami Aquifer and present a concept of monitoring the till material.

Action: As stated.
